GOVERNMENT OF INDIA.

REVENUE AND AGRICULTURAL DEPARTMENT.

INDIAN WHEAT TRADE.

PART I.

PAPERS REGARDING THE IMPURITY OF INDIAN WHEAT AND THE ESTABLISHMENT OF WAREHOUSES FOR CLEANING AND GRADING WHEAT FOR STORAGE.

PART II.

PROCEEDINGS OF THE CONFERENCE ON INDIAN WHEAT IMPURITIES HELD AT THE INDIA OFFICE, LONDON, ON 8TH MAY 1889, AND PAPERS CONNECTED THEREWITH.

PART III.

PAPERS RELATING TO THE INTRODUCTION INTO INDIA OF THE SYSTEM OF GRAIN ELEVATORS IN VOGUE IN THE UNITED STATES OF AMERICA AND IN CANADA.

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PREFATORY NOTE AND SUMMARY.

IN 1879 a volume was published of Selections from the Records of the Home, Revenue and Agricultural Departments (No. CLX), entitled "The Wheat Production and Trade of India," which comprised papers on the following subjects: (1) statistics of Indian wheat production and measures for the development of the trade; (2) adoption of a system for the inspection and grading of wheat and other grains; (3) employment of steam threshing machines for wheat; (4) employment of blowing, winnowing and screening machines for cleaning grain before shipment. A report by Dr. Forbes Watson on over 1,000 samples of wheat collected from various parts of India is included in this volume.

In 1883 a further collection of papers was issued embracing (1) a report on further samples of wheat sent from the Punjab to London for examination; (2) reports by District Officers on the soils on which wheat is grown, their productive powers and the system of cultivation; (3) a valuable report prepared in December 1882 by Messrs. McDougall Brothers of Mark Lane, London, on the value of the principal varieties of Indian wheat to the miller and baker as compared with the wheats of other countries.

The papers contained in the present volume deal principally with a subject which has attracted much public attention, *viz.*, the impurity of Indian wheat, its causes, and remedy. Incidentally they afford information on other matters affecting the trade in this important staple. They are divided into three parts:—

Part I.—Papers regarding the impurity of Indian wheat, and the establishment of warehouses for cleaning and grading wheat or for storage.

Part II.—Proceedings of the Conference on Indian wheat impurities, held at the India Office, London, on 8th May 1889, and papers connected therewith.

Part III.—Papers relating to the introduction into India of the system of grain-elevators in vogue in the United States of America and in Canada.

PART I.

The principal documents included in the first collection are: a Resolution published by the Government of the Punjab, which furnishes a review of the wheat trade in the chief wheat-producing province of

India, a report by the Director of the Department of Land Records and Agriculture, Bengal, and a memorandum by the head of the corresponding department in the North-Western Provinces and Oudh on a scheme for cleaning and grading wheat before shipment.

An account of the United States system for the commercial classification of wheat is contained in the papers published in 1879 and referred to above. Opinions were at the time against the adoption in this country of any measure resembling the American rules, which involve the entertainment of a staff of Government Inspectors and special railway arrangements. Not only was the Indian export trade in grain small in comparison with its present dimensions, but the rapid extension and development of railway communications which have taken place in recent years were at that period scarcely anticipated. It was felt, therefore, that the introduction of measures having for their object to facilitate transactions in enormous masses of produce, not to improve the quality of grain, would be premature and undesirable.

Some years later (in 1883) the discussion of the subject was revived by Messrs. Reinhold Brothers of Cawnpore in a letter addressed to the North-Western Provinces Government, in which they suggested the establishment of an agency for cleaning as well as weighing and classifying wheat under Government supervision before its despatch to Calcutta for exportation. Briefly the scheme was that warehouses should be established under the management of a committee at the chief centres of trade, like Cawnpore, where wheat could be examined and stored prior to despatch by rail to the ports. All wheat tendered at the warehouse was to be first weighed, classed, and tested as to impurities, and if these exceeded the proportion admitted by the exporting trade, the consignment would be refused admittance into the warehouse until it was cleaned down to the proper standard in sheds provided for the purpose. The owners of wheat admitted into the warehouse would receive from the committee a negotiable certificate entitling the holder to the quantity and class of wheat specified therein. To give confidence to dealers in the integrity of the committee, it was considered of vital importance that one of its members should be an official of the Agricultural Department. The principal advantages claimed for the scheme were: freight saved on impurities, re-weighment and re-examination at the port rendered unnecessary, and grain consigned to exporters in a condition to go direct from wagons to the ship's hold.

Messrs. Reinhold's scheme, which in some respects followed the American system, was discussed by the Director, Department of Land Records and Agriculture, North-Western Provinces and Oudh, in a report on the wheat trade of those Provinces, written by him in July 1884. He admitted that the scheme would have great advantages; and

was of opinion that if it was found that the export of wheat was being checked by the customs which prevailed at the port of shipment, the traders in the North-Western Provinces should take some such measures as those recommended for their own protection. It was, he explained, the practice of consignees at the port to deduct a fixed percentage for impurities without regard to the pureness of the consignment, and this encouraged artificial adulteration, as the cultivator could and often does clean his wheat beyond the standard. Complaints were also made of unfairness in assessing samples at the port, and the Director thought that examination by the proposed committee should be made at places where the wheat left the province, as the stations on the railway to which grain was brought were very numerous. He appears, however, to have foreseen the impossibility of working the system without the co-operation of merchants at the port who fixed the standard of purity and might refuse to recognise the committee's certificate, and he was finally of opinion that it was the proper business of private agency to carry out the scheme, and that "Government should not interfere unless the Chamber of Commerce find that they are unable to insist on proper arrangements being made."

Here the matter rested until the publication in March 1885 of the Resolution already mentioned by the Local Government, on the wheat trade of the Punjab.

Referring to the dirty condition of the grain purchased for export as the "chief economical drawback" of the wheat trade, the Punjab Government inclined to the opinion that cultivators were not guilty of deliberate adulteration, and that at present no encouragement in the shape of better prices was offered to them by middlemen to produce a purer grain. It was not, however, in the opinion of the Local Government, within the means of cultivators to sift their wheat entirely free from impurities, and in the existing conditions of cultivation winnowing to be done efficiently should be undertaken by traders who had the capital to employ machinery; Government could only advise cultivators through its officers that it would eventually be to their interest to offer to buyers the cleanest wheat they could produce.

Adulteration was believed by the Punjab Government to be mostly due to the carelessness or cunning of the petty village traders or middlemen. In Ludhiana they were found to deliberately water and mix wheat with dirt, and in Ferozepur the Chamars were reported "to make it a trade to supply different coloured earths (worked up into small grains) to suit the colour and size of different kinds of grain." Government, it was remarked, "cannot interfere with a trader who sends his wheat to Karachi in a dirty condition," but these malpractices would bring their own remedy when middlemen found their wheat

consignments were cleaned and examined at the port and payment made only for the cleaned grain.

The Local Government was strongly convinced of the necessity for cleaning the grain once for all in the province before despatch to the port and then sending it direct to the shipping, thereby saving freight on refuse, and other inconveniences. It also encouraged the idea of central grain marts up-country, and urged municipalities to assist in establishing them, but it maintained that in these matters there was no opportunity for any direct action on the part of Government.

The opportunity offered by the appearance of this review by the Punjab Government of the circumstances of the wheat trade was taken to bring under the consideration of Local Governments generally Messrs. Reinhold's scheme for wheat warehouses, and they were asked to procure for this important question more full discussion and consideration in communication with the commercial public than it had received.

What follows is a summary of the replies which, together with the connected correspondence, form the contents of Part I of this volume. It is, however, necessary to remark that, owing to a misapprehension of the purport of the enquiry, the attention of the authorities consulted has in several instances been diverted from a consideration of the measures necessary and feasible to check the exportation of impure wheat to the subordinate, though important, subject of the requirements of the traffic in the way of storage accommodation.

Madras.—In Madras the wheat trade is of small importance, the total area under wheat being less than 35,000 acres. The provision of warehouses in the interests of trade generally was discussed in 1882 and 1883, and the Local Funds Boards were averse to spending any money on them. One warehouse for storage had, it was reported, lately been built near the Arcot Railway Station, but few merchants made use of it or appreciated its usefulness.

Bombay.—In the correspondence forwarded by the Bombay Government discussion was confined to the provision of warehouses for storage and shelter only; and the scheme for cleaning and grading warehouses was not considered. The advantage of having store-houses was generally recognised by the Bombay Chamber of Commerce and the railway authorities, but the Chamber objected to such store-houses being made use of by traders for hoarding supplies, and urged that rules and fees should be imposed to prevent their doing so. The Bombay, Baroda and Central India Railway, while admitting that store-houses might be profitably constructed at some stations, contended that it was not the business of the railway to construct them or to do more than provide sites near stations and lay down a siding where necessary. The Superintending

Engineer, Southern Division, however, thought it is quite as much the duty and interest of a Railway Company to provide goods accommodation as it is to provide accommodation for passengers. On the other hand, the Commissioner, Central Division, who considered "the whole scheme exceedingly premature" and the business of private enterprise, held that local funds could not properly be devoted to the construction of goods sheds.

The view taken by the Bombay Government was that it does not come within the province of Railway Companies to erect store-houses, though sites may in some cases be found on railway lands; that provincial funds cannot with propriety be spent on this object, and that the matter is one for the consideration of Local Boards and Municipalities.

That storage sheds can, under suitable circumstances, be made a profitable investment is indicated by the returns of one at Nadiad in the Kaira District, which was built for R4,820, at the cost of Local Funds, and yielded a rent of R868.

Bengal.—The Director of the Department of Land Records and Agriculture furnished an interesting report on Bengal wheat. Referring to the subject of adulteration and impurities, he remarked that the real reason "lies, not in the defectiveness of winnowing arrangements, but in the fact that it is not to the cultivators' interest to produce entirely clean grain; for, so long as a minimum of 5 per cent. refraction is deducted by exporters in Calcutta, it is evident that it is the interest of the producer to mix dirt with the grain to that extent at least." His Assistant seemed to think that it is not the producer but the *bepárí* or petty trader who adulterates, and he added that, "as matters now stand, wheat in Patna is freely adulterated." He further mentioned that the Manager of the Dumraon Raj was at one time prepared to cultivate wheat on a large scale and clean it by machinery, but abandoned the idea on learning from Messrs. Ralli Brothers that "owing to the action of the merchants in England they could not afford to pay more for a clean sample than they now did for grain with 5 per cent. refraction."

The Director came to the conclusion that, although it is desirable to effect improvements in winnowing and threshing, should any be found possible, the root of the evil complained of can only be reached by the abolition of the system of deducting a minimum refraction of 5 per cent.—a "remedy which lies in the hands of the merchants themselves." He went on to say—

"The facts mentioned by the Manager of the Dumraon Raj show conclusively that clean grain will be forthcoming if the merchants pay for it, and that it will not be forthcoming, however perfect the winnowing and threshing arrangements may be, so long as a minimum of 5 per cent. is deducted for impurities, be the samples ever so clean.

"These facts and arguments have been brought to the notice of the Calcutta Chamber of Commerce, who, while not denying their force, express regret that they are unable, in the present state of the trade, to alter the existing practice in this respect. As long as that practice continues, it would appear to me to be futile for Government officers to talk to cultivators of the advantage of producing entirely clean grain."

As regards Messrs Reinhold's scheme, the Director reported that there was "unanimity of opinion adverse to the proposal."

"I agree," he wrote in the view that it is impracticable and inexpedient to establish grading warehouses in the manner suggested, and concur with the Director of the Agricultural Department of the North-Western Provinces in thinking that if any such action as is suggested by Messrs. Reinhold Brothers is to be taken, it is precisely the kind of thing which ought to be done by private agency and in which Government should not interfere unless the Chamber of Commerce find that they are unable to insist on proper arrangements. In the present instance the Chamber are opposed to such interference, and no complaints are anywhere made of the insufficiency of the present storage accommodation at railway stations."

The Calcutta Chamber of Commerce in commenting on the scheme urged that Government officers should impress on cultivators the advantage of keeping their wheat clean, teach them the different commercial varieties, and induce them to cultivate the better kinds only. They could suggest no remedy for the practice of adulteration said to be pursued by up-country dealers, and thought that self-interest might be left to teach them the folly of such proceedings. They considered that cleaning and grading warehouses would fail on the score of expense, and that Government would help trade interests better by improving communications.

The Bengal Government in its remarks on the Director's report expressed regret that the Chamber of Commerce had declined to re-open the question of an alteration in the standard of refraction for wheat, but trusted that if the prospects of the trade improved it would be possible for the Chamber to take action in this important matter.

The Local Government further considered that the establishment of warehouses for cleaning and grading grain was a matter which should be left to private agency, and concurred with the Director and other officials consulted that Government interference in this respect was clearly undesirable.

In a subsequent correspondence the Chamber explained that "it is because experience shows that wheat can seldom be delivered in Calcutta with a less amount of admixture than 5 per cent. that the committee do not see their way to recommend an alteration of the standard of refraction." The Chamber added that "so long as Indian cultivators grow wheat crops carelessly, or along with, or side by side with, other grain or seed crops, so long will it be difficult to obtain wheat in quantity of a purity which would enable exporters to alter the standard of refraction. But real service would be done both to the trade and the cultivators if

the officers of Government kept steadily before growers of wheat that it is principally the admixture of foreign grains and seeds which (being very difficult to separate) maintains the 5 per cent. standard of refraction, and also impressed upon them that to obtain a better price for clean wheat, such wheat must be sent into the market in large quantities."

The Chamber also laid stress on the absence of proper and sufficient accommodation at railway stations for receiving wheat which, during the rainy season, results in much damage to consignments and loss to shippers, and "is one of the main causes of bringing Indian wheat into disfavour with home consumers."

A further report from the Director of the Department of Land Records and Agriculture contained the result of some experiments in cleaning wheat with a steam threshing machine similar to those tried in the Bombay Presidency, and a further discussion of the question of refraction. It was found possible to clean down the grain to 2 or 3 per cent. of impurities, but a comparison with wheat threshed in the ordinary way tended to show that the latter was, in spite of its greater impurity, under existing circumstances, the more profitable of the two. With the object of putting the question whether a better price can be obtained for clean wheat from European buyers to a practical test, Messrs. Ralli Brothers were reported to have shipped to Marseilles two sample consignments of wheat, to be sold on their merits, one with 6 per cent. refraction, the other cleaned down to 3 per cent., and the firm was of opinion that if remunerative prices could be obtained for the cleaner grain, exporters would adapt themselves to the demands of consumers. At the same time it is believed that the tendency of the requirements of trade, to which shippers would naturally conform, was to receive purer wheat, and that this would be greatly encouraged and assisted if cultivators could be induced to restrict the present system of sowing mixed crops, The Director, however, adhered to the opinion that official interference with the practice of cultivators would not be productive of any useful results until it could be clearly shown that the reforms suggested would be distinctly profitable to themselves.

In this conclusion the Local Government concurred.

North-Western Provinces and Oudh.—The North-Western Provinces Government concurred in the conclusion expressed in 1884 by the Director of the Department of Land Records and Agriculture in regard to Messrs. Reinhold's scheme. As to warehouses for storage, it did not think that they were wanted. "Traders would be deterred from using warehouses scattered along the lines of rail by the difficulty and expense of maintaining proper supervision and control over their stocks at a distance from their places of business, and in some degree also by the loss of secrecy of their trade involved in use of public warehouses."

Ordinary requirements in the way of storage at railway stations are, it was stated, already provided by Railway Companies, and it would not pay to erect large godowns which would only be used in times of exceptional pressure. Finally, it was remarked that octroi had not been proved to divert or influence the grain trade, and warehouses had been more than once tried and failed.

The subject of refraction was discussed at greater length in a note prepared at a later date after full enquiry by the Director, who was led by the evidence he had been able to collect to the conclusion that a modification of the arrangements at the ports was needed to encourage the exportation of cleaner wheat.

He admitted that the wheat sent to the ports was still very far from pure, and that in the existing state of Indian agriculture it must be so; but that it was sometimes purer than the standard, in which case the shipper made an unearned profit; on the other hand he sometimes lost in London on excessive admixture. This might perhaps be an evil inseparable from the trade as at present carried on, but it gave rise to all sorts of disputes and malpractices injurious to the trade. The only remedy he could suggest was the establishment at the ports of an independent authority appointed by Government to determine all questions of refraction and classification.

He did not think local depôts for cleaning wheat would answer, as the trade was very scattered, and recommended, in preference, the establishment at the ports of large cleaning and storing depôts. He then introduced a suggestion for improved railway arrangements, by which grain might be moved in bulk, and unloaded and cleaned in one operation, and a saving effected of 1*s.* 7¾*d.* per quarter landed in England. The project involved new shed arrangements, altered wagons, elevated lines and shoots, and alterations probably in the accommodation in cargo boats and ships' holds.

The two things required were, in the Director's opinion, (1) that London should fix the standard, and that the whole Indian trade should be aware of its having been so authoritatively fixed; and (2) that every question of refraction and classification should be disposed of by an independent authority at the port. He believed that the 5 per cent. rate has been fixed by London in ignorance of the real capabilities of the country to give purer wheat, and that it would fix 2 per cent. if it knew that this was not only possible, but, under his suggested project, cheap and easy. He advocated that a representative should come out from London for the purpose. As regards the cultivator, while he held that self-interest is his best teacher, and that a hint from the trade followed by a practical example would be the best sermon he could get, yet the Government and Agricultural Department might do something by the supply of good

seed, by prizes and the sympathy and encouragement of District Officers.

Punjab.—The Punjab Government forwarded a report showing what has been or was proposed to be done towards providing warehouses for storage.

The Financial Commissioner wrote that "arrangements are already in train for erecting warehouses at Lahore, Kasur, Batala and Pathankot. At Amritsar a warehouse is considered unnecessary, as Messrs. Ralli Brothers have erected large sheds of their own for cleaning and storing grain." At other large exporting stations selected by the Manager of the North-Western Railway as places at which it would be most desirable to have warehouses, their construction was not considered feasible "in the present state of feeling on the part of the traders."

The Financial Commissioner concluded with the remark that, attention having been drawn to the advantages of providing sufficient storage for grain and other commodities at the principal exporting stations on the railway, and a commencement having been made at places where warehouses are likely to pay and where the local and municipal authorities are in favour of establishing them, nothing more could be usefully done in this direction at present. In this opinion the Punjab Government concurred.

Central Provinces.—The Chief Commissioner reported that already a plot of ground had been provided by his administration near every railway station of importance for the erection of warehouses for storage, but he was of opinion that it should be left to private enterprise to build sheds when needed, his experience being that when Government provided such buildings they were seldom used.

Berar.—The Agricultural Association at Amraoti advocated the formation of an association of the European merchants in Berar, with a district official at its head, which should distribute broad-sheets of advice to cultivators, offer prizes for improved cultivation, and generally interest itself in all that concerns the subject. The Commissioner of the Assigned Districts thought that the offer of prizes would have little or no effect, and that the ryots, who had already been advised by circular not to sow mixed varieties and to clean their wheat better, were being taught the disadvantage of selling impure grain by the lower prices which they receive from traders for such wheat; in short he believed that self-interest and experience would prove their best teachers.

The only remedy the Amraoti Agricultural Association could suggest for the adulteration of wheat was to license the petty brokers and to fine them when they were caught encouraging the sale of dirty wheat. Among District Officers who noticed the subject, the prevalent opinion

was that the Government cannot usefully interfere in such matters of trade, and that the remedy lies with the traders. In this opinion the Resident agreed.

As regards storage sheds, the Commissioner reported that they had been erected at several places, but the sheds were only used by the traders during the monsoon months when the grain traffic is nearly over. At other stations the want of them was not felt, as the towns are close to the line of railway and the grain is stored in private pits; moreover, during eight months in the year grain can be stored in the open air with safety, and there is little doing during the rains, by which time the cotton season is over, and the existing accommodation at railway stations is sufficient for such traffic as takes place.

The foregoing paragraph completes the summary of the replies received to the Circular enquiry of 16th May 1885. Independently of the official discussion of the subject the Bombay Chamber of Commerce, in November 1886, addressed the principal Corn Trade Associations in the United Kingdom with the object of effecting a reduction of the proportion of impurities in Indian wheat permitted by the trade rules, and the correspondence which ensued to the close of the year 1888 will be found in Appendix A to Part I. It was pointed out by the Chamber that the existing allowance of 4 per cent. of dirt, when the grain could be cleaned down to 1 per cent. by the producer, was equivalent to a burden of something like 1¼ per cent. on the Indian wheat trade, and as it was to the interest of all concerned that wheat should be exported as clean as possible, a reduction of the allowance to 2 per cent was suggested. This proposal was eventually (in 1888) adopted by the Liverpool Corn Trade Association, but the Chamber failed to secure the co-operation of the London Association, whose reply was to the effect that there was no demand on the part of buyers for an alteration of the existing terms of contract, and sellers were not unanimous on the subject. This refusal in the part of the London Corn Trade Association practically rendered nugatory the action taken by the Liverpool Association.

PART II.

Efforts in India having failed to bring about the alteration in trade contracts which its advocates considered essential to the reduction of impurities and the general improvement of quality in Indian wheat, Lord Cross, Her Majesty's Secretary of State for India, decided on holding a conference of the leading merchants and millers in England to ascertain their views on the subject and the possibility of coming to some conclusions which would be satisfactory to all parties. The proceedings of the Conference which was held at the India Office, London, on the 8th of May 1889, and the papers connected therewith, form the second part of this volume.

In opening the proceedings His Lordship, after drawing attention to the growing importance of the imports of Indian wheat, and the fact that they contained, specially in the later months of the year, a large proportion of impurities instead of being, as they should be, as clean as possible, pointed to the useless expense and the folly of paying for and importing 3,000,000 cwt. of "dirt," which was the quantity estimated to be contained in the annual shipments of wheat from India to the United Kingdom. His Lordship believed that the evil was a good deal due to the system of contracts in fair average quality (*f. a. q.*), and citing the action of the Liverpool Association and the benefits which had attended the imposition of a fixed limit of admixture in the case of linseed, he enquired whether it was not feasible to insist on the importation of wheat in a cleaner condition.

While they serve to explain the considerations on which the existing customs of the trade are founded, the discussions which followed show much diversity of opinion on the practicability and expediency of altering them. The arguments advanced against and in favour of such a step may be summed up as follows.

Opponents of change urge that "dirt" is not the principal impurity of Indian wheats, and, together with flour dust caused by weevils, seldom exceeds 2 per cent. Admixture of other grains, due to the Indian practice of sowing mixed crops, is the chief cause. Late season shipments are dirtier owing to weevil and to the better wheat having been sold out. The high allowance for impurities is based on the normal condition in which wheat arrives. To arbitrarily reduce the allowance to 2 per cent. would mean either a discount on the price now paid to native sellers or cleaning down to that standard before shipment at an extra cost of 10½*d.* or 1*s.* a quarter. English millers will not pay a premium for clean wheat, and prefer the *f. a. q.* basis, which gives them a chance of getting bargains. Whether cleaned in India, wheat must be cleaned by millers. To sell wheat on a basis of percentage refraction would involve expensive analysis owing to the great variations in quality, and cause much hindrance to business. *F. a. q.* contracts are best suited to actual conditions of trade, and rest upon a system of average samples made up from wheat as it is received. Upon this basis India is able to export all the wheat she can spare. Wheat is now shipped in much better condition than formerly, and will continue to improve; it is inadvisable to force reforms.

On the other side, it is argued that it is not the case that wheat normally contains the proportion of impurities admitted in contracts, and would be shipped in much cleaner condition if importers insisted on a higher standard, as is proved by the example of cotton. The *f. a. q.* basis is too elastic and encourages artificial admixture; it also operates

against better prices being offered for special clean parcels sold "to arrive." Many millers are willing to pay higher for clean wheat on sales "to arrive" if certain of getting it, and already do so in transaction on the spot. It is therefore both practicable and desirable to raise the standard of purity, and this can best be done by introducing into contract fixed conditions as to admixture. The dirty condition of Indian wheat restricts its use to millers who have special cleaning machinery. The uncertainty as to quality renders it unpopular and handicaps it in competition with wheat from other countries. Cleaning could be done economically in India, and would effect a great saving in freight.

A strong contradiction of the statements put forward by the opponents of the 2 per cent. refraction will be found in a letter of the Bombay Chamber of Commerce to His Excellency the Governor of Bombay, which forms Appendix L(2) to Part II. The Chamber unhesitatingly assert that, although wheat may, under the compulsion of the form of contract maintained by the London Association, be shipped with 4 and 5 per cent. of admixture, it is readily obtainable cleaned to 2 per cent., and that there would be no difficulty in carrying on trade on that basis.

The practical result of the discussion at the India Office is contained in a letter from the London Corn Trade Association given in Appendix K, in which the London Association announce new standards agreed upon after consultation with the Liverpool Association. These standards allow of impurities ranging from 4 to 5 per cent. in ante-monsoon shipments and from 5 to 7 in post-monsoon shipments, according to the class of wheat, and are apparently based on actual analysis of samples of the crop of 1888. Replying to the London Association in their letter dated 6th December 1889 (Appendix L), the Bombay Chamber pointed out that the allowances are in excess of the impurities shown by the analysis, and therefore not calculated to encourage cleaner shipments. The answer of the London Association was that "they did not see their way to go further in the matter of refraction at present."

Besides the above correspondence there are several papers of interest embodied in the appendices. The Appendices to Part II contain the East India shipment and delivery contracts and rules of the Liverpool and London Corn Trade Associations. Appendices E and G bear on the question of the unpopularity of Indian wheat with English millers and the causes of it. Appendices H and I and J and K are communications from Mr. John McDougall, whose reports on Indian wheat have done much to attract attention to their excellent qualities. In his first communication Mr. McDougall explained the system on which trade is conducted, and reported, as the result of special enquiries, that a ready sale at better prices could be found among millers for clean wheat if the supply were certain and large. In his second communication Mr. McDougall furnished an

interesting series of tables showing the percentage of admixture of white and red grains and of dust, dirt, seeds, weevilled and damaged grains found by analysis in wheat imported from India and other countries. The third report is an analysis of the replies to questions addressed by order of the Secretary of State for India to 732 of the principal millers in the United Kingdom with the object of ascertaining how far their consumption of Indian wheat was affected by the prevalence of admixtures. Mr. McDougall summed up the replies as follows :—

(1) Impurities in Indian wheats greatly restrict their use.
(2) Clean Indian wheats are much desired, and would cause a largely increased demand and a higher price,
(3) Millers earnestly desire a new contract form limiting admixture to under 2 per cent.

In his last communication Mr. McDougall, referring to the insufficiency of the action taken by the London Corn Trade Association to produce any improvement in the cleanliness of wheat shipments, suggests the introduction into India of the American system of cleaning, grading and shipping grain.

PART III.

This subject was about the same time brought under separate consideration by the receipt, through the Secretary of State for India in December 1889, of proposals from Mr. James G. Smith of Messrs. Ritchie, Stewart and Company, Bombay, for the formation of a "Grain Cleaning and Elevator Company."

Mr. Smith's proposals and the reports of the local authorities consulted upon them by the Government of India and the Provincial Governments form Part III of the present compilation.

A detailed explanation of the objects of the scheme and the advantages to be secured is given in a memorandum by Colonel Filgate, R.E., who also furnishes an account of the management of American elevators. The business to be conducted by the proposed Company is briefly defined by the promoter in the following terms :—

(1) To erect elevators, cleaning or other machines for the cleaning, grading, and storage of wheat at all ports and railway stations connected with the grain trade.
(2) To levy charges (which may be under the control of Government) for the cleaning, grading, loading, and storage of grain.
(3) To issue certificates for the grain under the Company's charge.
(4) To act as agents for producers and others for the disposal of their grain.
(5) To act as agents for merchants and others for the purchase of grain.
(6) To make advances of money against grain held in the Company's elevators.
(7) To advance money to the ryots on the security of their land, crops, &c.
(8) To act generally as warehousemen, forwarders, shippers, and agents in all matters connected with the grain trade.
(9) To charge for any or all of these conveniences to the trade according to usage.

and the advantages claimed are, among others,—

(1) The improvement of the reputation of India as a wheat-growing country.
(2) The extension and improvement of the cultivation of wheat by the above and by putting the business on a more satisfactory footing.
(3) The improvement of the position of the producer by depriving others of the opportunities of mixing, carrying and profiting by an adulterated or dirty sample which was subsequently at considerable expense and trouble, to be brought to a clean state before it can be used.
(4) The reduction of the expense of carrying and handling by sea and land.
(5) Facilitating the storage, purchase and sale of; or the borrowing and lending of money on the grain crops.
(6) Opening the trade to all acquainted with the markets, as opposed to the present state under which it is confined to grain experts and to those who can or will pass off an adulterated article.

To float the scheme Government assistance on the following lines are asked for—

(1) Arrangements for the countersignature of certificates by Government officials.
(2) The free provision of land for the Company's purposes, either within or adjacent to the Railway and Port Trust premises, and connected with the lines by sidings.
(3) A guarantee that similar facilities will not be afforded to a competing Company or individual for a term of twenty-five years.
(4) That the grant of concessions as above extend to every grain-shipping port and along every line of railway built to be built or through the grain-producing districts of the Indian Empire.
(5) A guarantee of interest at the rate of 4 per cent. per annum for the first five years of the Company's operations, such advances being, however, repayable without interest from half of surplus profits in excess of 6 per cent.

In order to disturb existing arrangements as little as possible it is proposed to confine operations at first to fifteen selected stations on the Great Indian Peninsular, the Bombay, Baroda and Central India and the Bengal-Nagpur Railways and to only clean and grade the wheat, returning it into bags properly secured and covered by certificates, leaving the introduction of the elevator system of dealing with grain in bulk to the future. An outlay of £25,000 is considered sufficient to initiate the scheme.

Opinions on the project may be summarized under the heads of Railway Companies and Managers, Merchants and Port Trusts and District officials. Taking Railway Companies first, the Bengal-Nagpur Company are prepared to afford facilities for giving the project a fair trial. In forwarding their reply the Consulting Engineer to Government for Railways, Central Division, points out that elevators are hardly suited to India where grain has to be carried in bags, manual labour is cheap, and the trade done at most stations is small; he also sees objections to the signature of certificates by Government officials, and objects to

associating railway employés with the Company. The Agent, Southern Mahratta Railway, approved of the project. Some possible difficulties and disadvantages to the railway are put forward by the Traffic Manager of the Bombay, Baroda and Central India Railway and the Traffic Manager of the Rajputana-Malwa line is doubtful of success, but the Agent of the Company working these railways is "prepared to give all reasonable facilities that lie in its power for the establishment of elevators on the Company's system." To the Agent, Great Indian Peninsular Railway, the scheme appears impracticable as the "various qualities, small parcels, and want of large trade centres would, owing to present difficulties of transit, present insuperable difficulties." The Agent, East Indian Railway Company, is in favour of elevators, but despairs of their proving useful till a proper understanding is arrived at between buyers and sellers. On the Eastern Bengal State Railway the wheat and seeds traffic is small, and the Manager does not consider elevators required at up-country stations. The Managers, Tirhoot and Nalhati State Railways, are advocates of the scheme, but the former does not think it would pay on his line.

Among the mercantile community the Madras Chamber of Commerce think that, if the scheme were required, it would be established without Government assistance and guarantee. The Bombay Chamber having fully canvassed the subject with merchants in the trade, reports that "the opinions expressed are unanimously adverse to the proposed scheme as being unsuited to the requirements of the country and impracticable financially." They point out that there is no similarity between the conditions in America and India. The numerous varieties of wheat, the want of concentration, the climate which allows of safe storage in the open air for several months of the year, the superiority of the pit system of storage as a protection against weevils and the cheapness of manual labour are in the opinion of the Chamber all against the successful employment of elevators, and they maintain that given proper condition of sale in the consuming markets no difficulty exists in obtaining clean wheat at present. The Karachi Chamber of Commerce consider the scheme a desirable one, but the guarantees required unduly advantageous. The opinion of the Bengal Chamber is that "any attempt to introduce the grain elevator system into this country would be at least premature." They add that "should a real demand arise for clean Indian wheat, private enterprise will be equal to the occasion without requiring either the asistance of, or a guarantee from Government." "It is useless," the Calcutta Wheat and Seed Trade Association remark, "to try and compel people to clean wheat as long as the home trade is indifferent about it." At a conference between the Director of the Agricultural Department, Bengal, and Messrs. Ralli Brothers and Petrocochino and Pallachi the

following opinions were expressed: The elevator system is not suited to India, the guarantees asked for are impracticable, the cost would be prohibitive, clean wheat can be supplied without its intervention. Messrs. Anderson, Wright & Co. say the American system is "not what is wanted." Messrs. W. Moran & Co. and Balmer, Lawrie & Co. think elevators might be beneficial. The Agri-Horticultural Society of India consider that the project is "not likely to be of any direct benefit to the grower," because the quantity produced by each cultivator is small; he must sell at once and he can clean the wheat himself. It might act prejudicially to the grower in grading wheat in bulk and destroying the incentive of special prices for fine samples. Opinions collected by the Upper India Chamber of Commerce, Cawnpore, favour the establishment of elevators and cleaning depôts at the ports, but the grant of any monopoly to the Company is strongly objected to. Mr. J. Clarke, Agent to Messrs. McHinch & Co., Ferozepore, does not think the proposed company could change the existing conditions of trade or that it would be patronized by growers. He points out that wheat is cleaned by the cultivator's own family without cost, and it can be had clean and good when the European buyer is prepared to pay for it.

Turning to the replies of Port Trust officials, the Dock Superintendent, Bombay, notes that the variety of consignments carried in each vessel, the numerous ports to which vessels proceed and other difficulties exist against the introduction of the elevator system, while the Secretary to the Trust intimates that "in the opinion of the Trustees grain elevators are not required on their property. The Vice-Chairman of the Calcutta Port Commissioners states that the Commissioners "are of opinion that the scheme contemplated is not one which is suited to this country or one which should have the support of Government of the kind asked for."

Replies of Government officials may be noticed separately for each Province.

Madras.—The scheme is considered inapplicable to this Presidency, where the area under wheat is small.

Bombay.—A careful criticism of the proposals by Mr. E. R. Calthrop, Agent, Indian Light Railways, Limited, &c., is forwarded by the Director of the Agricultural Department, who, while doubting the success of the scheme as long as there is no demand for pure wheat, agrees with that gentleman that Government should assist the proposed company subject to certain modifications of their terms. The Acting Commissioner, Southern Division, reports that the District officers in his Division consider that elevators would be an improvement if people could be induced to use them, but are opposed to the grant of exclusive concessions. Native officers regard the scheme as being "in advance of the intelligence and wishes of the people." In the Northern Division the prevalent opinion is

that the scheme might be assisted by Government within reasonable limits; the Commissioner of the Division would restrict such assistance to the grant of sites. The Collector of Khandesh in the Central Division points out that if the company deals in money-lending and advances, it must inevitably deal in grain, which Colonel Filgate in his memorandum says it should not do on any account, and he questions whether Government should support a body which has these aims. The concession should, he thinks, be limited to a guarantee of interest, provided the company restricted itself to its legitimate business, but the Commissioner of the Division doubts the expediency of guaranteeing any interest. The Acting Commissioner in Sindh believes that the trade will find a more natural solution of present difficulties than the "establishment by Government aid of a company which aims at forcing an enormous existing trade into new channels;" but if the trading community is willing to co-operate, Government might grant free sites and such other encouragement as is usually given to private efforts to introduce useful methods. In the opinion of the Collector of Hyderabad, Sindh, elevators would in a very short time become popular, and it would pay a company to start them with more moderate system than that demanded by Mr. Smith. The Government of Bombay do not believe that the scheme would secure the objects in view, and are unable to recommend the grant of State aid in any form.

Bengal.—A full report is submitted by the Director of the Agricultural Department after consultation with the mercantile community. Since there is no demand for clean wheat, he believes that the company would not succeed in getting growers or sellers to go to the elevators, but if they are prepared to make their own arrangements to buy and sell grain besides cleaning it and to force a market for clean wheat, he thinks Government might guarantee 4 per cent. interest on an outlay of £25,000 for five years and free sites for building. Adverting to other measures for checking the impurities, he controverts the statement that 5 to 7 per cent. of dirt is the normal condition of Indian wheat, cites the evidence of the Agri-Horticultural Society and others to show that adulteration is systematically practised owing to the terms on which the trade is conducted, and expresses his conviction that until those terms are altered no improvement whatever can be hoped for.

With regard to interference by legislation, which has been proposed in some quarters, the Director observes that, while it is not advocated at present, should other remedies fail, it may have to be seriously considered whether dealing in adulterated wheat should not be made a penal offence. The Director also discusses a statement put forward by the Bengal Chamber of Commerce, that wheat has deteriorated in purity owing to the encouragement given by railway freight rules in recent

years to direct consignment to the ports from petty stations. A proposal was made by the Chamber that this policy should be altered and the special freight concession limited to despatches exceeding 50 tons. "It is not clear," the Director remarks, "how the adoption of this proposal could affect the cleanliness of wheat, while the proposal is obviously objectionable on other grounds as tending to unduly favour large exporters at the expense of the growers and petty dealers."

In forwarding the Director's Report, the Government of Bengal express concurrence in the conclusions come to, and add "the creation of a market for pure Indian wheat in England is most desirable, and very favourable terms may properly be granted to any Company, which can operate effectively in that direction. But the alteration of the method by which wheat is cleaned is not shown to be an enterprise meriting special support at the cost of the State."

North-Western Provinces and Oudh—"What the Grain-cleaning and Elevating Company propose to do for the ryots' grain," writes the Director of the Agricultural Department of these Provinces, "the ryot can do for himself, provided the conditions of the export market remain unaltered. No ryot and no local dealer will be at the expense of taking grain to the Company's premises and receiving it back again in a cleaned state unless there is a remunerative demand for this special class of grain." He further points out that to give the necessary security the Company must itself despatch consignments properly secured to the shipping port. He deprecates giving the Company any official character or authority, and would reduce State assistance to the grant of sites, a limited interest guarantee, and the like.

Concurring with the Director, the Local Government remark "the cultivator of these Provinces thoroughly understands the cleaning of wheat, and as with him labour is cheap there would be no inducement for him to take his grain to the elevators. The first thing to be done is to establish the demand for clean grain, which the present conditions of the trade have not yet induced, and this the Company can best do by establishing their elevators at the ports and not in the interior."

Punjab.—"Every reasonable encouragement should," the Director of the Agricultural Department in the Punjab thinks, "be given to the scheme for the introduction of wheat elevators into India." He is convinced that "a very large proportion of the dirt and impurities which are now to be found in wheats shipped from India are not due to sweepings from the threshing floor and the mixture of extraneous grains owing to careless cultivation, but to deliberate admixture of other grains and dirt by the middlemen." The introduction of the elevator would, he thinks, make it possible for those who desire to sell a cleaner wheat to do so without losing by the transaction, and Government should be

prepared to run even some risk of loss in an endeavour to raise the reputation of Indian wheat and the Indian wheat trade. The Director does not anticipate opposition to the scheme from middlemen, provided that he gets a proportionately higher price for certificated wheat.

The Secretary, Municipal Committee, Amritsar, believes the adoption of the scheme by wheat-growers in the Punjab "most unlikely," and that it would be strongly opposed by the middlemen. In his opinion it could only be successfully carried out, if at all, with the co-operation of large buyers." The Deputy Commissioner, Delhi District, remarks that good clean grain could be supplied by the growers without the elevator system, which might be an improvement at the port, but could not compete with cheap manual labour up-country. He adds, "the Indian grower cannot afford to hold his grain or to accept and negotiate elevator warrants. What he wants is hard cash, and that he receives now as soon as his produce is weighed over in the open market. The Deputy Commissioner, Ludhiana, holds that the scheme should be left to private enterprise alone. This is also the opinion of the Secretary, District Board Committee, Ferozpore, who doubts whether it would benefit cultivators. The Sub-Committee of the District Board favour the project as a possible means for checking the evil practice of adulterating wheat with earth, which is on the increase. The Commissioner of Jullunder would limit concessions to the grant of free sites. The Government of the Punjab are unable to offer any opinion until the concessions sought for are more clearly defined.

Central Provinces.—In the opinion of the Director of the Agricultural Department "were exporters paid according to purity, wheat would be exported in a very much cleaner state than it is at present." While elevators might add to the reputation and possibly raise the price of wheat, he questions whether they would increase the demand which is already strong enough to withdraw all the surplus produce, or induce growers to export direct. He thinks, however, that the experiment is well worth undertaking, and supports the grant of a limited monopoly, free sites, a salaried appraiser or inspector, and a guaranteed interest for a term of years on a fixed sum. District Officers in the Jabalpur Division generally consider the scheme a desirable one, but the concessions demanded excessive. Those in the Narbadda Division are opposed to any official connection with it, and are not sanguine of any beneficial results until the trade reforms. The Commissioner of the Nagpur Division sees no reason why the project should be treated otherwise than as an ordinary commercial enterprise, and deprecates official countersignature of certificates. The Deputy Commissioner, Wardha, remarks that the advantages of placing clean Indian wheat in the European market is so great that Government should give all the aid in its power to the proposed

scheme. He believes that both middlemen and ryots would resort to the elevator as soon as they found certificated grain fetching better prices, and that it would help growers by checking dishonest weighments, making it clear what kinds of grain were most in demand, and protecting them from the sharp practices of middlemen. The Deputy Commissioner of Nagpur does not think small producers would use the elevators, and large growers would only do so if it was made patent to them that they would realize more than they do at present, and this will not be the case as long as there is no decrease in the demand for wheat as it comes from the threshing floor. In the opinion of the Officiating Commissioner of Chhattisgarh "any attempt to introduce the cleaning of wheat before the traders are convinced of its value, and the loss attendant on adulteration is manifest to all, will fail." "I do not think" he adds "the scheme of cleaning wheat by elevators is at all practicable, or in any way adapted to the circumstances and conditions of the wheat trade of this part of India."

The Chief Commissioner of the Central Provinces considers the idea of a company like that proposed, attempting to deal with the ryots and to enter upon the business of money advances, to be quite chimerical, and "he can see no reason why it should be guaranteed by Government or receive any specially valuable concession."

This concludes the summary of opinions obtained in Mr. J. G. Smith's scheme. In the Appendices to Part III are two letters from Mr. Phillip Pavy, containing his observations on Indian wheat trade and cultivation, and an account of the introduction of the elevator system at Odessa.

The orders of the Government of India on the scheme for the formation of a "Grain Cleaning and Elevator Company" for India will be found in their Resolution No. 39, dated 20th October 1893, at page 306 of this volume.

INDIAN WHEAT TRADE.

PART I.

PAPERS REGARDING THE IMPURITY OF INDIAN WHEAT, AND THE ESTABLISHMENT OF WAREHOUSES FOR CLEANING AND GRADING WHEAT, OR FOR STORAGE.

1

Government of India, to Local Governments, No. 67A.—42—4, dated 16th May 1885.

Circular enquiry.

I am directed to forward a copy of a Resolution, recorded by the Government of the Punjab, on the subject of the wheat trade of that Province. The Resolution is of great interest and importance, and I am to suggest that the Local Government should give to it such publicity as may be considered necessary.

2. With reference to paragraph 11 of the Resolution, which deals with the question of the construction of warehouses near railway stations for the storage of wheat, I am to enclose a copy of the accompanying papers*. The Government of India will be glad if the Local Government will take such steps as may be expedient to procure for this important question more full discussion and consideration in communication with the commercial public than it has yet received. As at present advised, the Government of India is disposed to believe that official action might usefully be taken in co-operation with the commercial community with the object of providing increased facilities for the wheat trade.

* * * * * *

No. 67A.—42—4.

Copy forwarded to the Public Works Department for information, with the intimation that the Revenue and Agricultural Department will be glad to be favoured with an expression of the views of the Public Works Department on the questions of demurrage and warehouses, raised in paragraphs 10 and 11 of the Resolution No. 95, dated 19th March, and referred to in the subsequent communication from the Punjab Government.

* Papers Nos. 4 and 5 of the present collection.

2

Resolution by the Government of the Punjab, No. 95, dated 19th March 1885.

Review of Punjab Wheat Trade.

In the Review of the Report on the Internal Trade of the Province for the year 1883-84 the growing dimensions of the export of wheat were briefly noticed, and allusion was made to the fact that the subject of the improvement of the trade and of the encouragement which could properly be given by Government towards its development had been for some time under consideration. Since then the papers and statistics relating to wheat cultivation in the Punjab which have been compiled by the Commissioner of Settlements and Agriculture have been before the Lieutenant-Governor; and as the matter is one of the greatest importance to the Province, in which one-third of the cultivated area may be said to be regularly cropped with wheat, the Lieutenant-Governor deems it desirable to gather into a single Resolution the whole of the information which has been recently collected regarding the present conditions of the wheat trade of the Punjab and the suggestions which have been made for its improvement and development.

2. It will be convenient, however, previous to considering the papers which are now before His Honour, to sketch briefly the action which has been taken by the Punjab Government from the date at which the question of the wheat trade first came under discussion up to the present time. The conclusions drawn by Dr. Forbes Watson in his report on the subject dated 29th March 1879 were most encouraging. He considered that India was admirably suited for the growth of the finest qualities of wheat, both soft and hard, and he expressed an opinion that the Punjab was probably destined to become the chief wheat-exporting province of Hindustan. He suggested that the true policy in the matter was to encourage the cultivation of the finest varieties of wheat, and he commented on the mixed condition of the Punjab samples, and pointed out that the causes of the inferior quality of Indian shipments might be easily removed by the introduction of some simple screening and winnowing machines. In 1881 the Secretary of State for India called for a report on the description of soils in which the better classes of wheat indicated by Dr. Forbes Watson were grown and on the system of cultivation followed. Before the information for this report had been collected, the Resolution in the Public Works Department, No. 6436, dated 28th November 1882, was issued under the orders of the Lieutenant-Governor. In that Resolution the necessity of the extension of railway communication and the reduction of railway freight was specially dwelt upon, and it was shown that India could as yet compete with America in the markets of Europe only when the latter had a deficient crop. The railway rates for the carriage of grain to the three ports of Calcutta, Bombay and Kurrachee were compared, and it was demonstrated that, although the East Indian Railway, owing to its cheaper coal-supply, could afford to carry at lower rates than the Sindh, Punjab and Delhi Railway, the cheapest route for all Punjab grain above Ludhiana, or perhaps Umballa, was *viâ* Kurrachee. The advantages of this port were thus described: "Situated at the extreme northern end of the Indus Delta, it is connected with the entire river system of the Punjab. It possesses a harbour

Dr. Forbes Watson's suggestions, 1879.

Railway extension necessary.

safe and easy of approach, with fairly regular soundings and few formidable currents. It has the additional advantage of being northward of the limit of cyclones. It is less affected by the south-west monsoon than most parts of Western India. Being nearer by 200 miles to Aden, and bringing as it does a great part of the frontier 1,000 miles nearer to England than the route *viâ* Bombay, the importance of the port of Kurrachee as an outlet to this Province can hardly be exaggerated." This was written in November 1882, when the cost of wheat delivered at the port of Kurrachee was R3-2-0 per maund. At the present time it is being exported at R2-7-0, and as the sea freight is now 43 per cent. lower than it was in 1882, wheat can be delivered in England at 10*s.* 7*d.* per quarter less than it could be two years ago—a fact which of itself is sufficient to show how greatly the importance of the Punjab wheat trade has increased during the last few years. Since then the publication of the report by Messrs. McDougall Brothers, of which the substance is contained in the extract annexed to the present Resolution, has shown beyond dispute that in certain respects Indian wheats are second to none in the world, and the special attention of the principal English wheat firms and Indian Chambers of Commerce, as well as of Local Governments and Administrations, has been naturally directed to the whole subject of the export of Indian wheat. In reply to the enquiries instituted in connection with the report called for by the Secretary of State, it was originally shown that about 6½ million acres were under wheat in the Punjab, and that, speaking roughly, 5½ maunds per acre for unmanured rain lands, 7½ maunds for manured rain lands, and 10 to 14 maunds for lands manured and irrigated, might be assumed as the yield of an average crop. It was further stated that the soft red was the most common variety of wheat, and that the method of cultivation was essentially the same everywhere in the Province. This information, though useful and reliable as far as it went, was hardly sufficient to publish for general guidance. The Financial Commissioner was accordingly requested to take steps for the collection of further facts with reference to the various points that had been raised in connection with the subject, and as the question in many of its aspects was one peculiarly affecting the Agricultural Department, the enquiry was entrusted to the Commissioner of Settlements and Agriculture. Colonel Wace has now embodied all the most recent information on the subject in the pamphlet entitled "Punjab Wheat," which is above mentioned. This pamphlet, for which the thanks of the Lieutenant-Governor are due to Colonel Wace, gives in a succinct manner the actual conditions of wheat production in the Punjab, and will, it is hoped, prove of real practical value to all who are interested in the question of the Indian wheat trade, from what point of view soever their interest arises.

Advantages of Kurrachee as a port.

Punjab wheat acreage.

Col. Wace's pamphlet.

3. Before proceeding to a consideration of the papers published by the Commissioner of Settlements and Agriculture, it may be noted that the conclusions arrived at in the Resolution of the Public Works Department, to which allusion has been made in the preceding paragraph, regarding the importance of Kurrachee as an outlet for the trade of the Punjab, have been fully borne out by the returns for the last two years. In 1879 the export of wheat to Kurrachee was valued at R74,668. In 1882-83 the money value of the wheat consigned by rail to that port,

Export to Kurrachee and Bombay.

exclusive of river traffic, amounted to R51,42,886, and in the past year to R54,71,950. The exports of wheat to Bombay have also been very large, and have increased from a weight of 2,18,897 maunds in 1882-83 to 14,33,576 maunds in 1883-84, while the consignments to Calcutta have decreased from 2,40,082 maunds in 1882-83 to 2,11,384 maunds in 1883-84. From a provincial point of view, therefore, the trade to Bombay and Kurrachee alone demands attention at the present time, and from the experience of the past few years there seems no reason why Kurrachee should not eventually become the natural and geographical outlet of this Province. It must be remembered, however, that in spite of these satisfactory figures Kurrachee up to the present has enjoyed but a very small portion of the trade of India, as will be seen from the figures below, which show the proportionate value of the foreign trade of each of the five chief ports during the year 1883-84 :—

	Per cent.
Bombay	41·57
Calcutta	38·48
Rangoon	5·07
Madras	5·28
Kurrachee	3·37

But though the amount of trade appears insignificant as compared with that of Bombay or Calcutta, it may be noticed that within the past year there has been a marked increase in the trade of Kurrachee, which amounts to 13·56 per cent. of that during 1882-83. This is due, no doubt, to the great activity in the export of oil-seeds and wheat; but the principal difficulty with which the export of wheat to Europe has to contend may be seen at a glance from the fact that 65 steamers have entered Kurrachee in ballast during the past year.

4. The other disadvantages from which the wheat trade of the Punjab suffers may be readily gathered from a perusal of the papers collected by Lieutenant-Colonel Wace, and it may be hoped that among other useful purposes these will result in the eliciting of suggestions as to the best means of remedying the faults which up to the present have been inherent in the production and storing of wheat. It appears to His Honour from a consideration of the reports now published, and from a general view of the facts which have been collected on the subject of railway communications and freights and other matters connected with the wheat trade of India, that the disadvantages under which the trade suffers in the Punjab may be conveniently treated as (1) economical and (2) administrative and physical.

Defects in production and storage.

5. The chief economical drawback is the dirty condition in which the grain is usually purchased, and the first thing is to obtain, if possible, a clean wheat for export unmixed with dirt and with other inferior grain. A perusal of the reports by District Officers leads the Lieutenant-Governor to agree with the opinion expressed by Colonel Wace that reform in this direction can be looked for only very gradually from the cultivators as a body. It is clearly indicated in many of the reports that the agriculturist has at present little or no interest in turning out a clean sack of wheat, as the middleman pays him no more for the cleaned article than is paid for uncleaned wheat. But this state of things obtains to a marked degree only when the cultivator is deeply in the debt of the

Dirtiness of grain the chief economical drawback.

middleman, and in those districts where the agriculturist is in prosperous circumstances there is no reason why he should not obtain a better price for a cleaner grain. The farmers in the Punjab are generally in a small way, and Sir Charles Aitchison is inclined to believe that for the purposes of a large export trade the work of cleaning the grain must, according to the natural division of labour, fall upon the trader, and that Government must look rather to the self-interest of this class and to the example set by Western enterprise, as in the case of Amritsar, where Messrs. Ralli Brothers have started machinery for cleaning grain, than to advising cultivators to take pains and trouble to produce a result which brings them little or no perceptible profit. It is admitted on all hands that at present the cost of threshing or winnowing machines is prohibitive to the small holder, but it has been suggested that it would perhaps not be beyond his means to thresh his wheat on a wood, canvas, or matting floor, and that a common fan would be far more efficacious than winnowing the grain by exposing it to the action of the wind by pouring it out of a basket or tray. It must be remembered, however, that the threshing floors in the Punjab are usually of the firmest consistency, and that the winnowing of the grain is accomplished for the most part by means of the strong winds which blow persistently in most districts of the Punjab during the months of April and May. Another reform which has been mentioned as essential for keeping wheat clean is that it should be stored in sacks, and until this is done the grain must always remain exposed to dust and dirt whenever it is moved from one place to another. Something might doubtless be done by middlemen in these respects, and the cultivator may be expected to gradually fall in with the views of the buyer, wherever it is possible to show him that the extra trouble entailed is fully compensated by the better price paid for the wheat. But it does not appear feasible for a Local Government or for Government officers to take any further steps in this regard beyond pointing out to the people that in the long run their interests are pretty sure to be found identical with those of the buyer. It would appear from the present papers that the Punjab cultivator cannot be justly charged with purposely adulterating wheat by the admixture of dirt.

Causes of impurity and their remedy.

6. But while Sir Charles Aitchison thinks it probable that the grower of wheat is not likely to find it greatly to his advantage to take much greater trouble in the harvesting of the grain than he does at present, he cannot take it for granted that the agriculturist has nothing to learn in the matter of wheat production. It may perhaps be the wiser policy at present to leave the cultivator very much to himself in the matter of the variety of wheat which he grows. The soft red wheat is a hardy plant, requiring less irrigation and less manure than the more valuable soft white; and at present the soft red variety is grown on 5 million acres out of a total of 7 million acres under wheat cultivation, according to the estimate framed by Colonel Wace. But though it is not the province of Government to interfere in any way with agricultural preferences for a particular variety, and though the advantage of State interference in questions of this sort is highly problematic, it cannot be considered beyond the sphere of officials that they should advise cultivators and middlemen of the fact that club or soft white wheats command a higher price in Europe than other varieties, and should give the people

Improvement in cultivation

an opportunity for trying what can be done with the white wheats. It must be remembered that the export trade to Europe is of very recent date, while the cultivation of wheat in the Punjab is of some antiquity; and in arguing the cultivator cannot be taught much, consideration should be paid to the fact that the conditions of the wheat demand have changed enormously, and that with a change in the demand an alteration in the conditions of production is inevitable. Colonel Wace deprecates the charge brought against the cultivators that they are careless as to the selection of seed, and it is satisfactory to learn that they are not indifferent to the importance of securing seed of a good quality; but Sir Charles Aitchison here too thinks that much might be done by District Officers to encourage recourse to an Indian pedigree wheat. It is also satisfactory to hear that the Punjab cultivator does not sow mixed varieties of wheat in the same field, that he does not ordinarily mix his wheat with other crops; and that when he does he has good reasons for doing so. But here again, if the advantages of growing wheat separately were pointed out to the agriculturist and his money-lender, they might consider that the reasons for growing a mixed crop were outweighed by better reasons for growing wheat alone. It seems, indeed, to Sir Charles Aitchison that in an important question such as this is, Government would be failing in its duty if it neglected any legitimate means of placing before the agriculturist the profits which may result from the production of a superior and unmixed grain, and of promulgating the simpler methods by which this improvement in production may be attained. The methods by which this may be most conveniently done in His Honour's opinion will be indicated below.

Pedigree wheat.

Village traders.

7. So far the actual producer has been considered, but it is necessary also to refer briefly to the position of the village traders through whose agency the wheat is largely collected. Here the Lieutenant-Governor is more inclined to agree with the Commissioner of Agriculture that little success can be expected from Government advice or interference. There can be no doubt that the mixture of wheat with dirt, or with inferior grains, or of one kind of wheat with other kinds, prevails to a large extent owing to the carelessness or cunningness of this class. The account from Ludhiána shows that the wheat is deliberately watered and mixed with dirt, and it is stated that in certain villages of the Ferozepore District the Chamárs make it a trade to supply different coloured earths to suit the colour and size of the different kinds of grain. The earth is worked into small grains, and it is almost impossible to winnow it out. These malpractices and the general carelessness of the trader who sweeps up dust and grains of other descriptions into his wheat will bring their own remedy. The trader will desist from such ways when he finds that the 1,000 tons of wheat which he despatched from Lahore have been cleaned and examined at Kurrachee, and that he only gets payment for 950 tons, and that too classed low for mixing. The report from Ludhiana shows that this process has already begun, and the middlemen must be left to learn their true interests by experience. Every opportunity, however, should be taken of explaining to this class that the cleaning process only requires to be done once, and that it ought to be done in the Punjab. If the grain were sent down to Kurrachee ready for shipment there would not only be the saving in the

Their malpractices.

carriage of refuse, but further the whole of the cartage charges at Kurrachee would be avoided, as the wheat could be run straight out to the shipping.

8. This leads to a consideration of the question how far the trade is hindered by causes which can be modified or removed by the Administration, or by natural causes arising from difficulty of communication and the cost of carriage. Though Government cannot interfere with a trader who sends his wheat down to Kurrachee in a dirty condition, and though it cannot at once obviate economical drawbacks arising from custom and the lack of intelligence and enterprise, still it is possible to do much by the spread of information generally and by affording facilities to trade. In connection with the expediency of cleaning the wheat once and for all up-country, the necessary accommodation at the railway works at Kiámári, which has greatly encouraged the direct shipment of grain, may be mentioned; but it must obviously rest with the traders of the Punjab to arrange for consigning their wheat to Kurrachee for direct export without having recourse to the expense and delay of an intermediate agency at that place. Another means of fostering the trade is to establish central grain markets, as in Amritsar, where the subject has been warmly taken up by the municipal authorities and local bodies, and it is probable that in other grain centres as well much might be done to exploit the trade by the action of municipalities.

Central grain marts advocated.

9. There can be no doubt that the first great requirement for the development of the wheat trade is the opening out of railways and roads as feeders to the main systems of the Province. The case for this has been forcibly stated by the late General Medley in his pamphlet "Railways in Upper India." Taking the best section of the Sind, Punjab and Delhi Railway, some 335 miles in length, between Lahore and Gháziabad, General Medley has shown that this is fed by metalled roads only at the stations of Amritsar, Jullundur, Ludhiána, Rájpura, Umballa, Saháranpur, Muzaffargarh, and Meerut, or at intervals of 39, 49, 35, 53, 13, 55, 36, 35 and 27 miles; while the Punjab Northern and Indus Valley lines, and the Mooltan and Sind sections of the Sind, Punjab and Delhi Railway may be said to have virtually no metalled feeders; and on the Indus Valley line traffic is practically suspended during the flood season,—*i.e.*, from June to October. The great need of feeder lines has never been lost sight of by the Punjab Government during recent years, and much has been done and will, it is hoped, continue to be done, to develop side by side canals for the better cultivation of wheat, and railways for affording greater facilities of carriage for that wheat. The Punjab Northern State Railway to Pesháwar will tap the virgin country about to be irrigated by the Swat River Canal, and the Rewári-Ferozepore State Railway will open out a great grain-growing tract in which large areas will be watered from the Sirhind Canal. The construction of the lines from Wazirabad to Siálkot, from Lála Músa to Miáni, from Ráewind to the right bank of the Sutlej opposite Ferozepore, and of the Amritsar-Pathánkot Railway, have all facilitated the export of wheat from important districts; and should the projected line of the Sind-Sagar Doáb, and the railway from Patiála to join the Ferozepore-Rewári line below Bhatinda, be ultimately constructed, the important wheat-fields of the jungle country and of Bannu, Dera Ismail Khan, and Muzaffargarh

Roads and Railways chiefly required.

Recent railway extensions.

will be opened by railway communication. It is undoubtedly true that in certain parts of the Province the usefulness of railways is diminished by the absence of good feeder roads, metalled and unmetalled. Unfortunately the condition of Provincial finances and the numerous urgent demands made upon the resources of the Punjab Government render it impossible for Sir Charles Aitchison to contemplate any systematic plan of operations for remedying existing defects. As far as the very limited means at the disposal of the Province can be made to go, the metalling of important roads will receive its fair share of attention, but more than this it is at present beyond the power of the Lieutenant-Governor to say. During the past year several projects for the construction of metalled roads from the balances of district funds placed at the disposal of local bodies have been approved by His Honour, and it is probable that some further development in the direction desired may be looked for from this source. But it is necessary for local bodies to proceed gradually in the making of metalled roads, which are very costly to maintain; and as far as the remarks above quoted on railways in Upper India have reference to the country beyond the Ravi, it must be remembered that the carriage there depends chiefly on boats and on camels, and that it may be almost said that carts do not exist in these parts, nor cattle of a size to drag them. Proposals for the construction of tramways as railway feeders have also lately been before the Lieutenant-Governor. Those relating to the lines from Karnál to Delhi and from Gurgaon to Mathra are still in abeyance, but His Honour hopes that as soon as the permission of the Supreme Government is accorded, the intentions of the promoters of the tramway from Amritsar to Tarn Táran will be carried into execution, and he understands that suggestions are about to be submitted to the Local Government for the construction of a line from Chunián to Changa Manga. Meanwhile, under the orders of the Government of India, the railway terminus at Gandasinghwála is about to be joined with that at Ferozepore by means of a light tramway passing over the bridge-of-boats. These experiments will be fraught with much interest for the Punjab, and should they prove successful it is possible that the railways of the Province will become gradually supplied with a number of important tramway feeders in the future.

Tramways as railway feeders.

Drawback of Kurrachee: no return trade

10. There are certain difficulties, however, in the way of the Punjab wheat trade connected with the management of existing railways which appear to the Lieutenant-Governor to require attention. It may be at once admitted that the export trade is at present heavily weighted by the fact that, owing to the absence of a return traffic from Kurrachee, it has to bear the cost of its own haulage and that of the empty returning wagons, and that consequently railway freights to Kurrachee must rule high. Various suggestions have been made for encouraging the import trade to Kurrachee and for fostering a traffic from that port up-country. But His Honour at present sees no way in which the Punjab Government can assist in this direction, and though he is ready to recommend any concessions that may appear fair to him, he cannot help thinking that the import trade of Kurrachee must depend for its development on the growth of wealth in the Punjab. But leaving out of the question the high rates of carriage, it appears to the Lieutenant-Governor that sufficient has scarcely been done in the way of popularising the railways. Some papers

which have recently come before His Honour on the subject of the competition of country carts with railways show that even yet the people of the Punjab adhere on certain roads to cart traffic in preference to using the railway. There are many reasons for this which are outside the influence of railway management, but one point is fixed upon as highly unpopular among the native community,—*viz.*, the charge for demurrage; and it has been suggested that this should not be made until consignees have had sufficient time and warning to allow them to remove their goods without undue haste. It further appears from these papers that carts and ekkas, and even a bullock train, regularly ply between Lahore and Amritsar—a fact that would seem to point to the necessity of a reduction in railway freight for short distances and of greater attention to the convenience of traders on the part of the railway. The large firms engaged in the export trade and the Chambers of Commerce must necessarily be in a better position than a Local Government can be to judge of the possibility of greater facilities for the transport of wheat, and doubtless they will not fail to invite the attention of the railway authorities to this point from time to time. As, however, the matters here noticed have recently attracted the attention of the Lieutenant-Governor, His Honour has thought it proper to refer to them briefly in the present place.

Railway reforms. Demurrage rules: Freight for short distances.

11. The absence of storing room at the stations on the Indus Valley Railway and the difficulties in procuring storage at Sukkur have been mentioned in the report from the Muzaffargarh District, and it would seem both politic and profitable to establish wheat warehouses as depôts of the trade. In connection with this it may be mentioned that proposals for constructing such warehouses on the Amritsar-Pathánkot Railway are under consideration. In the present state of intelligence it is hopeless for the railway authorities to look for due advice being given as to the date when the quantity of goods tendered for despatch may be expected at the railway, but where warehouses are constructed at stations the officials would at once know the requirements of traffic, and would be able to avert the rush and glutting of the lines which is so detrimental to economic working. Moreover, the establishment of such godowns would meet another evil by which trade is occasionally diverted from its natural course; for if traders knew they could find accommodation at railway stations for their goods, they could avoid storing their grain in places where octroi is levied, and could seek the nearest point on the railway.

Want of storage.

12. Finally, it remains to notice the measures for the improvement and development of the wheat trade which the Lieutenant-Governor thinks can be usefully adopted by the Government. First among these is the publication of information regarding trade. Sir Charles Aitchison has recently taken steps to make the trade returns of his Province fulfil some of the purposes for which such statistics are compiled. In future these returns will be published quarterly, and at a date sufficiently early, it is hoped, to give valuable intelligence to the public. Further, under recent orders of the Government of India, a forecast will in future be prepared showing every year the area under wheat cultivation, the condition of the young plant and the probable yield of grain, and this information will be telegraphed to England in time to apprise the corn trade of the probable state

Publication of early trade information.

Trade returns; forecasts; European prices and freights.

of the market in India before they commence their annual operations. Similarly, the current prices in England and in other countries in which Indian wheats find a market might be circulated to the trading and agricultural communities, and information should be available of the freight rates prevailing at the different seasons of the year. In this direction the Chamber of Commerce, Kurrachee, might usefully co-operate, and efforts should be made to give wide and authorised publicity to this information. His Honour would therefore wish the Financial Commissioner to address the Kurrachee Chamber of Commerce on the subject, and ascertain if they could arrange for the preparation of quarterly statements showing the English price reduced to maunds and rupees at current rates of exchange, shipping charges and approximate freights, and the railway dues from the nearest stations in the district to Kurrachee. Such statements might be published for general information in the principal wheat markets of the Province, and judging from the allegations contained in the district reports of the general ignorance prevailing on the subject, they would doubtless prove of considerable practical value.

Improvement of cultivation: Grant of prizes for wheat.

13. There are many other methods which have been suggested for the encouragement and improvement of wheat cultivation. It has been proposed to give prizes for the best-farmed fields, to place samples in each tahsíl of the wheat most in demand, and to publish a broadsheet urging the cultivation of better wheat. The scheme of giving prizes has not been approved of, and the Commissioner of Agriculture appears to think that the agriculturists already know what kind of wheats are most in demand, and that even if samples were sent to tahsíls, the agriculturists would not go to look at them. The Lieutenant-Governor will not at present press the question of the giving of prizes; but the assumption that the kinds of wheat most suitable for export are generally known appears to be opposed to the facts contained in the report of the Deputy Commissioner of Delhi and other papers in Colonel Wace's pamphlet; while a number of officers have approved of the suggestion that samples of wheat should be placed in each tahsíl in the wheat-producing districts of the Province. Sir Charles Aitchison would therefore desire that this may be done, and he would again wish to impress on all officers the fact that the conditions of agriculture, so far as wheat is concerned, are changing very rapidly, and that too much reliance must not be placed on the belief that the Punjab agriculturist has nothing to learn. Experience no doubt is worth a great deal, but agricultural experience when allied to custom is apt to make a community stubborn and unenterprising. In the same way Colonel Wace has disposed of the proposal to publish broadsheets with the remark that all that can be put into a simple pamphlet is known and practised by the cultivator to the best of his ability. But this is to beg the whole question of agricultural improvement, and Sir Charles Aitchison in dealing with a subject of such large issues as the wheat trade cannot accept the proposition that things should remain as they are. Many officers have expressed an opinion that such a paper would prove of great use as a guide to cultivators, and one officer, Mr. Wakefield, has suggested an excellent skeleton form for such a broadsheet. His Honour would wish therefore that a well-considered and practical broadsheet should be prepared in the Agricultural Department on the cultivation, harvesting, and storing of wheat, and that

Exhibition of wheat samples at Tahsils.

Distribution of broadsheets to cultivators.

it should be made available for distribution in the various dialects of the Province to all zaildárs, village headmen, and patwárís.

14. That the wheat trade of the Punjab should have expanded in so surprising a manner is all the more remarkable when it is considered how little has been done for it either in Europe or in the Punjab in the way of advertisement by statistics such as have been mentioned above. And if with all these drawbacks the trade has flourished, it is reasonable to anticipate a prosperous future for the Punjab wheat if the physical disadvantages under which it suffers can only be lessened. The Sukkur railway bridge, which has been described as "the link now wanting between the granaries of the Punjab and the seaboard," will doubtless give a very great impetus to export trade, and will effect a saving both in time and money; but there still remains the fact that the distance from the wheat lands of the Punjab to the seaboard is very great, and that in comparison with railway rates in the west of America, Punjab exporters had to pay in 1883 20*s*. 10*d*. per ton per 1,000 miles more than their American competitors. It must therefore be constantly borne in mind that strenuous efforts will have to be made to economise in the cost of production and in the cost of carriage to Kurrachee if Punjab wheat is to overcome adverse freights and a long sea voyage before competing with American produce. As has been already stated, Punjab wheat is now being exported to England at a rate which is 10*s*. 7*d*. less per quarter than it was two years ago. Of this reduction, it is perhaps fair to attribute a considerable share, amounting to 8*s*. 1*d*. per quarter, to improvements effected by the Government and railway administrations, among which may be mentioned the abolition of the Sutlej ferry dues, the saving in cartage resulting from the construction of a branch line from Gandasingh to Raewind, the abolition of the Sukkur ferry toll on grain for export, the reduction in freight charges over 1,000 miles from $\frac{1}{8}$ to $\frac{1}{7}$ pie per maund per mile, and the saving on cartage, freight, and intermediate agency on through-booked grain which has been cleared up-country *viâ* Kiámári. By these improvements alone it has been calculated that a saving of something like 5*s*. 7*d*. per quarter, or 9 annas 1 pie per maund, has been achieved in the cost of transport of wheat from the Punjab to the seaboard. Efforts too have been made by the railway to stimulate the import trade by reducing the rates for the carriage up-country of coal, metals, and piece-goods. At present there is reason to hope that the Punjab wheat trade will maintain in a measure the importance it has so suddenly assumed. But the export trade is weighed down by the heavy cost of carriage to Europe, and for this reason it behoves Government and all concerned to free the trade of India from all impediments, and to offer every possible facility to growers and exporters. The Press, Chambers of Commerce, and the Railway authorities have it in their power to assist the development of the wheat trade in the Punjab; but Sir Charles Aitchison expects too that District Officers will do all they can to make known to cultivators the advantage of reaping pure and unmixed grain, and of separating at seed time the soft and hard and the red and white grains, and of sowing them in separate fields, and to advise small traders of the loss and delay which must attend the despatch of dirty, uncleaned wheat. For many years the Indian wheat trade must necessarily remain an inter-

Conditions of competition with America.

Strenuous measures necessary on all sides to maintain present position.

mediate trade dependent for its expansion or contraction on causes which vary considerably. To secure the prosperity which has attended the export trade of wheat from India during the last few years a number of circumstances were necessary. Abundant crops in India and crops below the average in the United States and Europe, with low rates of freight and low rates of exchange, combined to foster the Indian trade, but if any one of these factors is wanting hereafter, the profits attending the export of wheat may be reduced to a margin scarcely remunerative. It is for this reason that His Honour would again urge the necessity for reducing in every possible way the cost of wheat production in the Punjab, and that he cannot accept the conclusion of the Commissioner of Agriculture that the Punjab cultivator has little to learn in the matter of wheat cultivation, and little to gain from listening to official advice. On the contrary, it appears to Sir Charles Aitchison that on a subject such as the present the Government have much to teach the cultivator; and if the instruction given is seconded by the self-interest of the growers of wheat, there is every reason to hope that the action of Government will result in better modes of cultivation, more careful selection of seed, and in cleaner methods of threshing and winnowing the grain, as well as in the removal of the administrative and physical difficulties now in the way of the trade.

Annexure to foregoing, Extract from Notes by Messrs. McDOUGALL BROTHERS, *dated London, 15th December 1882.*

McDougall Bros.' Report.

In addition to the particulars contained in the foregoing returns, we have to report that to any one experienced in the requirements of the wheat and flour markets of the United Kingdom, and indeed of most other countries, it will be evident there is no probability of these Indian wheats coming into demand for manufacture into flour *without a liberal admixture* of other wheats. They all possess, in a marked degree, the same characteristics of great dryness, and a distinct beany and almost aromatic flavour inseparable from wheats grown in the climates and soils of the tropics. Also the flours are ricey, the texture of the breads is too close, and the crust is hard and brittle. But these characteristics do not detract from their usefulness in any important degree. As is well known, a miller cannot show skill in his craft to greater advantage or profit than that with which he selects his wheats and mixes his grists so as to produce to best advantage a flour from which bread can be made of the colour, bloom, strength, and flavour desired, and with all a good yield.

Peculiarities of Indian wheats.

We pronounce them to be exceedingly useful wheats, in fact hardly equalled for what is deficient and wanting in the English markets by any other wheats. Their chief characteristics are just those in which the wheats grown in our variable climate are most deficient. Their great dryness and soundness renders them invaluable for admixture with English wheats that are in any degree out of condition through moisture, and the great proportion of the wheats harvested here have been in that condition for some years past—a condition that must prevail in all other than wheats harvested and stored during fine and favourable weather;

and this the English farmer knows, greatly to his cost, is a state of climate that is by a long way the exception rather than the rule. Added to their dryness, the thinness of the skin of these wheats and consequent greatness of the yield of flour must always place them in the front rank as a "miller's" wheat whenever they are handled with reasonable intelligence and skill.

Such unprecedented yields of flour as are shown by these wheats, ranging (by ordinary grinding) from 77·46 to 80·52 per cent., against English 65·2 and American spring 72·2, speaks volumes in their favour; and their value is still further increased by another point of merit of almost equal importance,—*viz.*, a larger percentage of bread may be obtained than from any other of the flours included in this review.

Their comparative value.

That for the best of these Indian wheats (the fine soft white), on the day they were valued on Mark Lane market, a price was offered as high as that for American winters, New Zealand or English (see list of values in synopsis), proves that the great value of the Indian wheat is becoming recognised here—a knowledge that will ere long extend to all our markets. The other lots of Indian wheats (Numbers 2, 3 and 4) were lower in value to the extent of 4 shillings to 5 shillings per quarter, as might almost have been expected from the difference in colour and other characteristics; still, as these latter wheats become better known here, this difference in price will be somewhat lessened. Their beany flavour is not a serious obstacle, as fair average deliveries, when well cleaned and properly dealt with, can be employed in the proportion of 25 per cent. to 50 per cent. along with home-grown or other wheats, such as American, possessing a fine sweet, milky, or nutty flavour.

Glancing at all the facts here elaborated, it is evident that these wheats afford a larger margin of profit, both to the miller and baker, than any other.

We venture to record a conviction we have long held, strongly emphasized by the results of these experimental workings, of the measureless importance of the great resources of the Indian Empire being developed to the utmost in producing wheat for this country. Farmers here are finding that to live they must produce beef and mutton rather than grain; hence the greater need of resources of supply under our own control.

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Messrs. REINHOLD BROTHERS, *Cawnpore, to Government, North-Western Provinces and Oudh, dated August 1883.*

Reduction of intermediate charges.

To enable India to compete successfully with America and other countries in the grain and seed trade, all intermediate charges should, as much as possible be curtailed, and the advisability of bringing wheat from up-country by rail direct to the ship's side has been discussed by the Government as well as by the Railway authorities; but objections have been raised by merchants that it is necessary to re-weigh and examine the goods on arrival at Calcutta before the goods are despatched to the ship and final payment is made to the native merchants.

Impurity and short weight.

To us it appears the main cause of the delay and extra charges incurred thereby are simply due to the irregularities pursued by a great many of the native grain merchants in dealing with Calcutta firms. Their goods frequently contain a large admixture of foreign matter, to the great detriment of the value of the wheat itself in the European market; besides, there is usually a great difference in the weight of each bag, and as under the general rule of contracts in Calcutta only 10 per cent. of the bags are weighed, the supervision becomes all the more onerous to the merchant-shipper if the time for delivery is curtailed and thereby quick despatch into boats is enforced.

To obviate this state of things, we beg leave to make the following suggestions for His Honour the Lieutenant-Governor's consideration, and shall feel obliged if His Honour will forward the same to the Government of India for consideration and orders.

Cleaning warehouse at Cawnpore.

One of the chief and central stations for the wheat and grain trade on this side of India is Cawnpore. The East Indian Railway at this station has ample room at its disposal, and we think if it could be made available for the building of receiving warehouses and cleaning sheds for wheat and seeds, against a small charge and moderate rental for a limited period, much of the grain trade could be concentrated here. Cawnpore has the advantage of a dry climate, and is therefore best adapted for such a depôt.

There are not many varieties of wheat either from the surrounding districts at Cawnpore which will facilitate the work for a superintending committee, to which we shall allude as one of the main points of the scheme proposed.

Warehouse rules.

All wheat tendered to be received into this warehouse should be *classified*, and a receipt and certificate be granted as to *quality* and *refraction;* no wheat to be received into store containing more than 4 per cent. *admixture of* foreign matter, or 5 per cent., *including* other grains and cereals.

Sheds for cleaning to be added to the storehouses, where natives themselves can superintend the cleaning.

The certified receipt of the committee will enable the bearer, or *bonâ fide* holder, to sell and transfer the same by endorsement, or deposit it with his bankers. The committee to adjudge the quality should be composed of one or two competent merchants or brokers of recognised standing:—

An official of the Railway Company;

An officer of Government from the Agricultural Department.

The *Receipt for Weight* will be given by the Railway authorities, to whom all the weighing will be entrusted.

The goods will be piled and bagged on examination, and receipt granted at the owner's expense; and the bags thus weighed will be despatched, any natural loss in weight during storage to be at seller's or buyer's risk, to avoid all claims for difference in weight hereafter against the depôt authorities.

Advantages claimed.

It is essential that the charges should be kept as low as possible, as an inducement to natives to bring their goods to the depôt.

The advantages we claim for this scheme are—

1.—That the owner of the goods, as soon as he has got his certificate, can either sell or deposit the same with his banker against any advances he may wish to have.

2.—That no extra freight is being paid upon useless admixture with grain.

3.—The European buyers can act with confidence as regards quality and weight, and let their goods go from the railway wagons direct on board the ship, saving intermediate charges and expenses.

4.—That it will facilitate the traffic arrangements of the Railway Companies, and greatly accelerate the delivery at the terminus and at the shipping port.

5.—That with such arrangements the goods may be directed to any dock or auxiliary shipping port, which are now contemplated by Government for enlarging the capabilities of the Calcutta sea-borne trade.

6.—That Calcutta merchants will have the opportunity of buying gradually a full cargo and keeping it stored in the depôt until the vessel or steamer is announced at the Sandheads, and can obtain advances upon warrants from bankers and others within a fair margin.

7.—That European and Native bankers will thereby be insured against unnecessary risks; whilst the security is undoubted, a fair competition in the banking branches will guarantee the holders against being charged usurious rates of interest.

8.—That it portends to elevate the character of the grain trade of this country, and must eventually, with an improved and even quality, lead to an increased demand for Indian wheat at home. It is unnecessary to say that indirectly the consequences of such a system can but act as greatly beneficial to the agricultural classes of this country.

If this scheme finds favour and meets with the approval of Government, similar depôts might advantageously be called into existence at other centres; but we have purposely named Cawnpore, in the first instance, as combining many of the advantages alluded to in the foregoing remarks.

Government co-operation needed.

The successful application of our proposal depends in a great measure upon the willingness of the Government to depute one of their officers of the Agricultural Department to be associated with the committee; this, we think, essential, to give to the class or quality, as well as to the weights entered into the warrants, an authoritative stamp and the value of a reliable security for merchants and bankers and to the smaller Native proprietors the assurance that there is scrupulously fair dealing with their produce.

For our part we shall be glad to assist and render such services, in connection with a scheme of this nature as may be required; and we trust that our standing and experience as up-country merchants will be sufficient to explain the great interest we take in this question, by submitting these papers to Government.

Director, Department of Land Records and Agriculture, North-Western Provinces and Oudh, to Local Government, No. 48 T., dated 25th July 1884 (extract).

Opinion of Director, Department of Land Records and Agriculture, North-Western Provinces and Oudh.

30. This brings us to the consideration of a scheme proposed by Messrs. Reinhold Brothers of Cawnpore, that a committee should be established at that place to give certificates as to the class, quantity and refraction of all wheat delivered at certain storehouses set apart for that purpose. Such certificates would, it is represented, do away with any further examination of the wheat at the port of shipping. A table in the appendix shows what the wheat trade of Cawnpore has been for the last five years. The exports by the rail may be accepted for every year as showing the total amount for that year, the road and river export being quite insignificant. But this is not the case with the imports, and we only have a complete record of them for 1879-80, when both road and river and canal traffic were registered.

In 1881-82, when the road traffic, but not the water traffic, was registered, we have an approximately correct return of the total imports.

31. I take the exports first and compare them with the total export of the Provinces for the same years :—

Year.	Bushels.	Percentage on total provincial exports by rail (s. 12).
1879-80	899,109	23
1880-81	572,249	15
1881-82	992,152	14
1882-83	617,441	10
1883 84	444,425	4

Relative importance of Cawnpore in wheat trade.

From this table it would appear that the importance of Cawnpore as an emporium for the export wheat trade is falling off, not only relatively but absolutely. Whereas its share of the total trade of the Province has fallen from nearly one-fourth to only one twenty-fifth part in five years, the actual transactions are only a half now to what they were in 1879-80. This may be due to a temporary fluctuation in trade (though in any case it is strange that Cawnpore should have had no share in the extraordinary increase of 1883-84), but the following considerations seem to show that this is not the case.

32. The appendix showing the imports is unfortunately defective, but one thing comes out with sufficient clearness, and that is that the whole of the imports come from Oudh, with the exception of a small contribution by canal from the Agra division. If we compare the total imports of 1879-80 and 1881-82 with the total exports for those years, we find that the former exceeded the latter by 637,065 bushels, or more than 300,000 bushels a year. This amount is probably kept for its own consumption. It is clear, then, that Cawnpore does not export its own produce or the produce of any district for which it is on the direct road for Calcutta. It is entirely dependent for its wheat trade on imports from Oudh. It is not likely that the cart traffic has increased sufficiently

to make up for the falling off in the railway traffic, and if we take (having no choice) the latter only as an indication of the relative amounts of the imports of wheat from Oudh in each year, we get the following results :—

Year.	Bushels.	Percentage to maximum.
1879-80	601,335	71
1880-81	609,301	72
1881-82	845,213	100
1882-83	304,437	36
1883-84	385,387	45

Cawnpore unsuitable as a cleaning centre.

The average of the first three years being exactly double the average of the last two, Cawnpore and Lucknow are at almost exactly the same distance from Calcutta; the former is outside and at the edge, the latter is in the centre of the wheat-producing districts, and with the opening of the Benares Bridge, and the abolition of octroi duties at Lucknow, it is hardly possible that Cawnpore will retain a commanding position in the wheat trade. I am therefore of the opinion that, if a committee of the kind proposed is to be established at all, Cawnpore would not be a convenient place for it.

Scheme would be advantageous.

33. Whether such an institution should be established anywhere in the Provinces is a matter on which I find great difficulty in forming an opinion. There is no doubt it would have great advantages. It is probable that there are faults in the present system which might be remedied. The practice is to have the grain carried off to godowns at Calcutta to be examined by or on behalf of the consignees for refraction. The cultivator can and often does clean down to 2 per cent. of impurities, but the consignees insist on deducting 4 per cent. on this account from the purest samples they receive, thereby occasionally making a not wholly deserved profit. The up-country dealer, however, soon learns this, and makes the profit himself by mixing the required proportion of dirt in the grain he gets from the cultivator. Whatever form the transaction takes it amounts to an *ad valorem* tax of 2 per cent. on the trade. It is said, moreover, that the business of assessing samples is much in the hands of native jemadars, and that there is a good deal of corruption. If subsequent trade reports gave ground to the supposition that the export of wheat was being checked by the dishonest practices which prevailed at the port of shipment, it would seem unquestionably right that these Provinces should take some such measure as has been recommended for their own protection. The stations where grain is brought to the railway are so numerous that no one of them would serve the purpose required, and the best places for a committee of the kind would seem to be where the grain left the Provinces—that is, Benares, Delhi and Agra. Of course, consignors would have the option of sending their goods to the certifying sheds or not. If it were found that consignees were satisfied with the certificates, an examination at Benares would save the examination at Calcutta, and might give an actual saving in time on the present system. It might also be found that the arrangements for

But should be left to private agency.

testing at Bombay were better than those at Calcutta, and in that case it would be unnecessary to open sheds at Agra and Delhi. Finally, this is precisely the kind of thing which ought to be done by private agency, and Government should not interfere unless the Chamber of Commerce find that they are unable to insist on proper arrangements being made.

Madras.

6

Resolution by Government, Madras, No. 922, dated 11th August 1885.

* * * * * *

Warehouses in Madras Presidency.

3. In regard to warehouses, it is observed that the question of their construction by Local Fund Boards was very fully discussed in the years 1882 and 1883, and that the majority of Boards expressed themselves averse, under their then circumstances, to the expenditure of funds on such undertakings. An allotment of R410 was, however, sanctioned by the Board of Revenue in their Proceedings, dated 6th June 1883, No. 1621, for the construction of a tiled warehouse near the Arcot railway station, and an expenditure of R380 appears to have been incurred on it up to 31st March 1885. Whether the building has since been completed, the Government are not aware. Other Boards have since expressed themselves more or less in favour of the construction of warehouses at various points along the line of rail when funds become available. It is observed that the cost of the Arcot warehouse was sanctioned from the Road Fund balance, on the ground that the construction of such buildings is as much debitable to Road Funds as the cost of a railway station is to railway capital.

7

Resolution by Government, Madras, No. 3267, dated 4th June 1886.

READ the following :—

From the District Board, North Arcot, to Director of Revenue Settlement and Agriculture, Madras,—No. 57, dated Chittoor, 18th January 1886.

I have the honour to reply to your letter No. 2436, dated 4th December 1885.

Warehouse: Arcot railway station.

2. A warehouse, at a cost of R410, was constructed near the Arcot railway station in consultation with the grain-dealers of Ranipet and Walajapet, in deference to the wishes of Government expressed in their order, dated 25th July 1882, No. 773. The Agent and Manager of the Madras Railway was good enough to grant the site free, and a compound wall was erected round the warehouse at a further cost of R310. On the completion of the building it was leased out, for the first time, for the current year, for R12-12, to one Arumuga Reddy, the highest bidder. The lessee is allowed to collect fees at a rate of one anna for every bandy-load and three pies for each head-load.

3. As to the working of the warehouse at present, it appears from the report of the Walaja Tahsildar that very few merchants make use of it or appreciate its usefulness.

Bombay.

8

Government of Bombay to Government of India, No. 6606, dated 17th September 1886.

With reference to Mr. Officiating Under-Secretary Bayley's Circular letter No. 67—42-4 A., dated 16th May 1885, forwarding copy of a Resolution of the Government of the Punjab and its accompaniments, on the subject of the wheat trade of that Province, and commending to the favourable consideration of this Government the question discussed therein about the construction of warehouses near railway stations for the storage of wheat, I am directed to forward herewith, for the information of the Government of India, copies of the papers noted in the margin, and to enquire if any progress has been made in providing such warehouses elsewhere, and whether the Government of India contemplates the construction of these warehouses by the Local Government, the Railway Companies, or the trade.

Letter from the Commissioner, Central Division, No. 634R., dated 11th February 1886, and accompaniment.

Resolution of Government in the Public Works Department, Railway, No. 781, dated 29th March 1886, and accompaniments.

Resolution of Government in the Public Works Department, Railway, No. 1676, dated 27th July 1886, and accompaniment.

Who should construct warehouses.

9

Commissioner, Central Division, to Government of Bombay, No. 634R., dated 11th February 1886.

2. It will be seen from the accompanying précis that there is at present but little hope of the establishment of such warehouses. Where the trade is great, the traders, very naturally, having their own wakhars, are opposed to the new scheme. Elsewhere the trade is not sufficient to render them in any way necessary. At places such as Khandesh, the people appear satisfied with present arrangements. In other cases where, if warehouses existed, they would probably do some good, there are no funds which could be spent on their erection.

Warehouses not in demand.

3. My own opinion is that the whole scheme is exceedingly premature, that if warehouses are required and are to be built, they will, as soon as the actual necessity arises, be built by private persons who will aim at a fair rent return. Such schemes, in my opinion, do not properly rest within the province of Local Funds, and some municipalities who might undertake them have already numberless costly requirements of a far more urgent and pressing nature to think of and meet.

Scheme premature.

10

Précis of Reports of Collectors, Central Division.

In forwarding copy of a letter from the Chairman of the Sholapur Municipality, Mr. Loch reports that, owing to the steady opposition of the merchants, the municipality have not been able to do anything in the matter. He adds that some Barsi merchants who had lately gone

Collector's reports. Sholapur.

to see him were entirely opposed to the project of building a grain market and warehouses at that town, on the ground that they all had wakhars of their own and they did not want to change their way of doing business. He therefore considers it unlikely that warehouses built either at Sholapur or Barsi would pay at present.

Khandesh. Mr. Propert sees no chance of introducing the railway warehouse system at the stations in the Khandesh District. He is not able to gather from the printed correspondence whether the Railway Company or the mercantile community are supposed to erect the buildings; the latter, however, he states, will certainly not do so, and if the former should pay the cost, they would charge rent which the Khandesh dalals who represent the Bombay wheat merchants would not pay. The wheat arrives at the stations in carts, and is, as a rule, loaded up in wagons without much delay and without expense. Mr. Propert, therefore, remarks that the time has hardly arrived for providing expensive buildings in which to store the grain previous to despatch by rail.

Poona. Mr. East intimates that as there is no wheat trade in Poona, the Managing Committee of the Poona Municipality are of opinion that there is no necessity for warehouses near the Poona railway station.

Ahmednagar. Mr. Waddington states that the wheat trade of the Ahmednagar District is not very extensive. The municipality of Nagor have constructed extensive godowns in the vicinity of the railway station for the storage of cotton, and these godowns are also availed of to a considerable extent for the storage of bajri and other grain, and would afford ample room for the storage of wheat as well, should the trade in that cereal increase. Beyond this Mr. Waddington does not consider that anything can be done in the Ahmednagar District.

Satara. In enclosing a return showing the outturn of wheat for each taluka during the year 1883-84, Mr. King reports that the wheat crop is by no means contemptible as regards the Satara District, but as the principal towns of the district lie at some distance from the railway, and it is at present uncertain how far the railway will succeed in competing with the traffic which now finds its way down to the small ports in the Ratnagiri and Kolaba districts, he is not able to state where the experiment of establishing grain warehouses could be tried with the best chance of success, and therefore only suggests that as the carrying trade of the district is likely to pass through a crisis which may amount to a revolution at no very distant date, no measures based on the assumption that the current of traffic will set in this or that direction can be safely or economically encouraged, and that they should be deferred until they are warranted by practical results.

Nasik. Mr. Woodward merely states that the Presidents of the several Taluka Local Boards concerned are in favour of establishing grain warehouses, but express their inability to provide funds.

11

Resolution by Government, Bombay, Public Works Department, Railway, No. 781, dated 29th March 1886.

READ again :—

Government Resolution No. 4692, dated 9th June 1885, in the Revenue Department.

From the Consulting Engineer for Railways, No. 2033, dated 25th March 1886.

With reference to Government Resolution No. 1602, dated 2nd January 1886 (passed on Revenue Department Government Resolution No. 4692 of 1885), submits the replies of the Agents, Great Indian Peninsula, Bombay, Baroda and Central India, and Southern Mahratta Railway Companies, and the Manager, Bhavnagar-Gondal Railway, on the subject of the provision of warehouses for the storage of wheat near railway stations, and observes as follows :—

"In accordance with the order embodied in paragraph 2 of the Revenue Department Government Resolution No. 4692 of 1885, communications have passed between the Consulting Engineer for Railways and the Agents of the Railway Companies, and the Manager, Bhavnagar-Gondal State Railway, with the object of ascertaining where warehouses are chiefly required. The replies of the Companies are given in the tabulated form attached hereto.

"The Great Indian Peninsula Railway Company now name certain stations at which they think warehouses are required. A statement, which accompanies, shows the wheat traffic of those stations and also the oil-seed traffic.

"The Bombay, Baroda and Central India Railway Company do not consider any further accommodation is required on the wide-gauge line at present. As regards the narrow-gauge line, the Agent is in correspondence with the Punjab Government.

"On the Bhavnagar-Gondal line there is no necessity for warehouses, and on the Southern Mahratta Railway the traffic is not yet sufficiently developed to admit of action being taken with confidence."

RESOLUTION.—The reports from the Railway Administrations and the statement of traffic should be forwarded to the Chamber of Commerce, Bombay, with the following letter :—

Suitable stations for warehouses.

With reference to paragraph 2 of Government Resolution in the Revenue Department, No. 4692, dated 9th June 1885, I am directed to forward copies of communications from the Railway Administrations under the control of this Government, expressing their views on the question of the desirability for the provision of warehouses for the storage of wheat near railway stations, together with a statement showing the total weight of inward and outward wheat and oil-seed traffic handled during the last three years at certain stations in the Central Provinces, and to solicit the favour of being furnished with the opinion of the Chamber as to the places at which warehouses would be most desirable.

Statement of replies from the Railway Administrations in the Bombay Circle as regards the Warehouse accommodation for grain traffic along the line provided by Local Administrations, Municipalities, and private traders, and their opinions as to the stations at which it is desirable that such accommodation should be provided.

Replies of Railway authorities.

Great Indian Peninsula Railway.	Bombay, Baroda and Central India Railway.	Southern Mahratta Railway.	Bhavnagar-Gondal Railway.
States that the Local Municipalities have erected storage-sheds at Nandura, Mulkapur, and Harda; that one at Murtizapur has been built by the Local Funds; that there are sheds at Nagpur, but they	As regards the general question, while conceding that the construction of such store-houses near stations where there is a large grain traffic offered, would be profitable to merchants, is distinctly of opinion that it is not within the province of the	No warehouses have been erected at any of the stations on the line by Local Administrations, Municipalities or private traders, and the trade in wheat and other food-	The traffic of wheat, &c., is at present small, and it is therefore considered unnecessary to provide warehouses near the stations on the line. No such accommoda-

Statement of replies from the Railway Administrations in the Bombay Circle, etc.—continued.

Great Indian Peninsula Railway.	Bombay, Baroda and Central India Railway.	Southern Mahratta Railway.	Bhavnagar-Gondal. Railway.
are little used; that there are also sheds at Chendni Bandar, Devlali, Kherwadi, and Dhamangaum (belonging to Messrs. Ralli Brothers) and Wardah (erected by Messrs. Naraindass Rajaram), but they scarcely come under the category of those which are the subject of enquiry. Adds that he thinks that warehouses might be erected in the first instance at the following stations on the line: Timarni, Sivni, Sohagpur, Pipariya, Bankhedi, Kareli, Chhindvada, and Narsingpur, and if the experiment is successful, other stations might be mentioned hereafter.	Railway Companies themselves to provide such conveniences, and that their action should be limited to rendering assistance in the way of providing sites where such cannot be found near stations and laying down sidings for facilitating, loading up, etc. The only stations on the Bombay, Baroda and Central India Railway at which storehouses would appear to be of any use are Nariad, Umreth and Wasad. There is one existing at Nariad erected by the Local Fund Committee, and suffices for the purpose, but the grain traffic is not sufficient to pay any one to construct them at the two latter stations, but the Baroda State might be moved to make enquiries as regards the desirability for providing such storehouses there On the Rajputana-Malwa Railway the only stations at which the construction of warehouses appears desirable are Delhi, Hansi, Hissar, Sirsa, Bhatinda and Kotkapura; at Bhiwani there is a warehouse built by the Municipality which is availed of by merchants.	grains has not sufficiently developed to enable the Agent to say at what places it would be desirable to provide such accommodation.	tion has been provided at any station by Local Administrations, Municipalities or private traders.

Statement showing the weight of total inward and outward Wheat and Oil-seed traffic of the under-mentioned stations on the Great Indian Peninsula Railway during the last three years.

Stations.	Wheat Traffic.	Linseed Traffic.	Til Seed Traffic.	"Other Oil-seed" Traffic.	Total Oil-seed Traffic.
	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.
Timarni . . .	7,50,780 (Tons 27,806)	3,351	2,883	...	6,234 (Tons 230)
Sivni . . .	14,63,905 (Tons 54,218)	23,486	27,173	...	50,659 (Tons 1,876)
Sohagpur . . .	2,30,180 (Tons 8,523)	2,873	7,023	27	9,923 (Tons 367)
Pipariya . . .	10,52,351 (Tons 38,975)	21,633	24,199	...	45,832 (Tons 1,697)
Bankhedi . . .	4,07,903 (Tons 15,107)	7,687	18,628	...	26,315 (Tons 974)
Kareli . . .	19,99,052 (Tons 74,038)	2,26,826	1,43,463	17	3,70,306 (Tons 13,715)
Narsingpur . .	1,72,590 (Tons 6,392)	6,548	10,527	...	17,075 (Tons 632)
Chhindvada . .	7,28,528 (Tons 26,982)	57,620	66,463	167	1,24,250 (Tons 4,601)

12

Resolution by Government, Bombay, Public Works Department, Railway, No. 1676, dated 27th July 1886.

READ again Government Resolution No. 781, dated 29th March 1886.

From the Secretary to the Chamber of Commerce, Bombay, dated 28th June 1886 :—

Opinion of Bombay Chamber of Commerce.

"I have to acknowledge the receipt of your letter No. 781 of 29th March last, forwarding copies of communications from the Railway Administrations under the control of Government, expressing their views on the question of the desirability of providing warehouses near railway stations for the storage of wheat; and requesting to be furnished with the opinion of the Chamber as to the places at which warehouses would be most desirable.

"2. Before replying, the Committee took steps to ascertain the views of the proposal entertained by the members of the Chamber who are most largely interested in the wheat and oil-seed trade of the port; and I am now directed to inform you that the opinions expressed are unanimously in favour of such warehouses or depôts being provided at all stations where the extent of the traffic appears to call for the accommodation.

"3. These points can, of course, be best indicated from experience by the railway authorities themselves; but I append a list of the places which, from the trade passing through them, seem to the members of the Chamber desirable locations.

Warehouse rules suggested.

"4. In connection with the proposed arrangement, however, I am instructed to point out that it would be advisable to impose such regulations for the use of the accommodation as would prevent its being availed of for the mere purpose of local storage, free of charge, as that might be utilised by dealers as a means of hoarding supplies with a view to affecting the Bombay market. Probably it would be sufficient to obviate this if it were made a rule that all stuff lodged in the warehouses should be allowed to remain only until such times as the Railway Companies were able to provide wagons for its removal.

Deficiency of rolling stock on Great Indian Peninsula Railway.

"5. It might not be out of place here to point out that serious complaints continue to be made by merchants, both Native and European, as to the delay and expense imposed on the trade by the deficient supply of rolling stock in possession of the railways. The complaints are more particularly against the Great Indian Peninsula Railway Company, who have been quite unable to keep pace with the requirements of traffic this season during the six weeks preceding the setting in of the rains. The fact of the pressure being confined to such a short space of time will, no doubt, be alleged by the companies as a reason for not providing themselves with a larger number of engines and wagons, but the concentration of traffic into a limited portion of the season is incidental to the nature of the trade, and quite unavoidable—in fact, is more likely to increase than diminish as time goes on, so that the want will have to be supplied sooner or later, and the earlier the matter is taken in hand the better. These proposed warehouses would, no doubt, assist in mitigating the pressure; but they would not accelerate the transport of produce to the seaport before the rains, which is the objection complained of."

RESOLUTION.—Extract, paragraphs 1 to 4, from the letter of the Chamber of Commerce, together with copy of Bombay Government Resolution, Railway Department, No. 781 of 1886, and of the statement therein referred to, should be forwarded to the Resident at Hyderabad, and the Chief Commissioner, Central Provinces, for information and such action as may be deemed necessary.

2. The Consulting Engineer for Railways should report on paragraph 5 after communication with the Agent, Great Indian Peninsula Railway Company.

Provision of warehouses not the duty of Railway Companies.

3. The question of providing warehousesor storesheds at stations in the Bombay Presidency should be further considered in the Revenue and Public Works Departments. As pointed out by the Agent, Bombay, Baroda and Central India Railway Company, it is not within the province of the Railway Companies to provide these conveniences, but sites may perhaps, in some cases, be found on railway land.

Railway Stations near which the Chamber of Commerce, in their letter dated 28th June 1886, recommend the establishment of Warehouses for the storage of Wheat, etc.

Suggested warehouse stations.

Ahmedabad Collectorate.

1. Viramgam.

Ahmednagar Collectorate.

1. Ahmednagar.

Khandesh Collectorate.

1. Jalgaon.
2. Chalisgaon.

Nasik Collectorate.

1. Lasalgaon.
2. Nasik.
3. Manmad.
4. Niphad.
5. Nandgaon.

Poona Collectorate.

1. Diksal.

Sholapur Collectorate.

1. Jehur.
2. Barsi Road.
3. Madha.
4. Mohol.
5. Kim.
6. Sholapur.

Baroda State.

1. Unja.
2. Mehsana.
3. Bhundu.

Kaira Collectorate.

1. Wassud.
2. Umrath.
3. Godhra.

Central Provinces.

1. Kirkian.
2. Timarni.
3. Pagdhal.
4. Seoni.
5. Dhuramkundi.
6. Dularia.
7. Itarsi.
8. Semri.
9. Piparia.
10. Bunkheri.
11. Gadarwara.
12. Kareli.
13. Narsingpur.
14. Chindwara.
15. Shahapur.
16. Pulgaon.
17. Degaon.
18. Panner.
19. Sindi.
20. Bori.
21. Sohagpur.
22. Nagpur.
23. Hurda.
24. Jabalpur.
25. Rajnandgaum.
26. Wardha.

Hyderabad Assigned Districts.

1. Mulkapur.
2. Murtizapur.
3. Manna.
4. Chandur.
5. Dhamargaon.
6. Khangaum.
7. Boregaum.
8. Amraoti.
9. Gulburga.
10. Akola.
11. Badnera.

13

Resolution by Government, Bombay, Public Works Department, No. 645 C.W., dated 8th November 1886.

READ—

Letter from the Superintending Engineer, Southern Division,—No. 1823, dated 11th August 1886:—

"I have the honour to acknowledge the receipt of Government memorandum No 868 B., of the 6th August 1886, which forwards, for report and opinion, certain papers bearing on the question of providing warehouses or store-sheds at railway stations; the call is in this form, and no special points are specified as those on which report and opinion is required; I trust, therefore, that it will be excused if I touch on any matters that may be considered beyond my province.

"2. First, as to where the obligation lies of providing such accommodation as may be required for giving shelter to goods as well as passengers arriving at stations for carriage by rail,—I should have thought that it was certainly with the Railway Companies, and that this had never been disputed; the remedy for any attempts to use these goods stations as store-houses is as indicated in the 4th paragraph of the letter from the Chamber of Commerce; the provision of warehouses for storage should, it appears to me, be left entirely to private enterprise; no company would think of complaining of excess of custom, and none can fairly object to providing passenger and goods station accommodation reasonably sufficient for their custom.

"3. In the face of the statement as regards the present condition of the traffic made by the Agent, Southern Mahratta Railway, no opinion, from any one as to the location of warehouses on that line, by whomsoever built, can be looked for; but some special arrangements for sheltering goods, carts and bullocks and their drivers, will certainly be required at both ends of the cart road link, between the above ghât and below ghât temporary termini, at Baralkod and Collem respectively, of the Hubli-Marmagao Railway; the above ghât terminus will be in a very unhealthy locality; the number of carts is expected to be 800 a day both ways, and this road link will be required for certainly one year (from the 1st January 1887) and probably two or more."

Memorandum from the Superintending Engineer, Northern Division,—No. 4163, dated 22nd September 1886:—

"Reporting on the accompaniments to Government endorsement No. 868 B. of 1886, dated 6th August, the Acting Superintending Engineer, Northern Division, is of opinion that warehouses for the storage of wheat, &c., near railway stations might advantageously be built at Wasad, Umreth and Godhra, and at Viramgam, Jhund and Sanand. At Viramgam the trade is large and thoroughly established, and there is little doubt that a large warehouse there, if conveniently placed, will be a convenience to trade and will pay a good return on outlay. The trade at Wasad, Umreth and Godhra is sufficiently large to require warehouse accommodation and to pay for it.

"2. At Jhund and Sanand it will be well to build at first small warehouses capable of extension, should trade develop and require more accommodation.

"3. The warehouses at Nadiad are much used and are financially a success, the best proof possible that such warehouses are a convenience to trade; but they would have been even more useful if better placed, as they are too far from the railway. When building new warehouses they should, if possible, be placed on a railway siding, so that the labour and loss and risk in loading may be reduced to a minimum."

Memorandum from the Superintending Engineer, Northern Division,—No. 4310, dated 4th October 1886.

With reference to Government memorandum No. 1051 B., dated 25th September

1886, forwards a letter from the Executive Engineer, Kaira, who states as follows:—

	R
"The warehouse at Nadiad was constructed from Local Funds at a total cost of R4,820 during 1884-85.	
The realisation on account of rent for the year ending 31st October 1885 (the first year after construction) was	439
The realisation on account of rent for the year ending 31st October 1886	868
TOTAL .	1,307

"2. There is no scale fixed for levying charges for storing grain, etc., but the different rooms in the building are put up to auction annually by the Revenue Authorities for one year's tenancy on certain conditions."

Memorandum from the Public Works Department (Railway), No. 2345, dated 22nd October 1886.

With reference to Public Works Department memorandum No. 1108 B., dated 8th October 1886, forwards a statement showing the weight of inward and outward wheat, cotton seeds and seeds traffic at the Nadiad Station of the Bombay, Baroda and Central India Railway during the last three years 1883 to 1885; and states that, as this Railway Company compiles no returns under the head "Oil Seeds," information as regards cotton seeds and seeds has been entered therein.

* * * * * * * *

Warehouses should be provided by Local Boards and Municipalities.

2. The provision of warehouses at railway stations is not an object on which expenditure could be incurred from Provincial funds, and the matter appears to be one for the consideration of the Local Boards and Municipalities concerned.

3. It is observed that a warehouse has been erected at Nadiad, the cost of which (R4,820) has been met from Local Funds, and that the receipts therefrom in the current year are shown as R868.

Bengal.

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Director, Department of Land Records and Agriculture, to Government, Bengal, No. 391 T., dated 7th July 1886.

* * * * * * * *

Bengal: Director of Agriculture's Report.

3. Regarding the question of obtaining clean grain for export, the following remarks were made in my letter of the 2nd September—

"The impure condition of Indian as compared with the wheat of other countries is attributed to one or more of the three following causes:—

1st—The mixture of other grains due to the practice of growing two or more crops on the same land at the same time.

2nd—Imperfect arrangements for winnowing the grain and removal of extraneous matter.

3rd—Deliberate adulteration by traders, brokers, or others.

"As regards the first of the causes enumerated above, it will be observed that the Bengal Government, in circulating among Commissioners the letter from the Government of India, No. 57A., dated 10th August 1883, with Mr. Bolton's circular

No. 7T—R, dated 4th September 1883, desired these officers to issue instructions to Collectors of wheat-producing districts, in accordance with the wishes of the Government of India, to impress on wheat-growers the importance of preventing the admixture of other grains with wheat, and at the same time called upon them to report the action which Collectors might take in the matter. The Commissioners generally reported, in reply, that little could be done, but added that all that was possible would be done in making known to the cultivators the importance of keeping their wheat free from foreign substances. The Assistant Commissioner of Palamow went further than this, and promised that he would endeavour to persuade cultivators to sow their wheat by itself in the course of his next cold-weather tour; while the Commissioner of Patna submitted for the approval of Government a draft circular which he proposed to issue to zamindars, patwaris, and others, pointing out to them the disadvantage of growing wheat in the same fields as other grains. Attention has, however, been called since that time to the circumstance that the cultivator, in growing oilseeds or other crops with wheat, selects such crops as are likely to succeed in a drought when wheat fails, and thus protects himself against the risks of an unfavourable season. Bengal wheat contains a large admixture of linseed, stones and mud. The standard of refraction in Calcutta being 5 per cent., any refraction there may be over and above this standard is deducted from the value of the parcel. If, for example, the refraction is 8 per cent., a deduction is made of 3 per cent.; but it is to be remembered, on the other hand, that as 5 per cent. is ordinarily deducted, it is doubtful whether cultivators would under existing arrangements derive any benefit from the production of entirely clean grain or grain in which there may be less than 5 per cent. of foreign matter. It is found in the trade that mud can be got rid of, but there is no process known by which linseed or barley can be separated from the wheat, and hence it happens that parcels containing an admixture of mud sell better in the London market than parcels containing an equal weight of admixture of other grains. It is to avoid this admixture that merchants agitate against the simultaneous growth of two or more crops with wheat in the same field.

Prevention of impurities.

"Refraction" system.

"The advantage of producing clean wheat would, as a matter of course, be represented by the smaller refraction of (say) 2 per cent. over and above the minimum of 5 which might be charged on pure wheat if it could be generally procured; but it is yet to be shown that any appreciable part of this advantage would reach the cultivator as long as a uniform minimum standard of refraction is adopted by the exporters in Calcutta. That, then, the growth of other crops simultaneously with wheat in the fields is, under all circumstances, to be deprecated, does not appear to be a conclusion so obviously certain *à priori*, or so firmly established by the results of experience, as to warrant, for the present at all events, the active interference of Government officers in discountenancing the practice. In the present state of our knowledge on the subject, all that it seems desirable to do is to point out to the cultivator the advantages, such as they are, of producing clean wheat, and of separating the hard and soft and the white and red grains in the selection of seed, and to leave it to him to determine whether the reasons for growing a mixed crop are outweighed by the reasons for growing it alone. The question, however, is one which demands further enquiry, and I request that you will give it your attention and report upon it in due time."

Mixed crops.

4. On the first of the causes enumerated above, to which the impurity of Indian wheat was attributed, namely, the admixture of other grains, due to the practice of growing other crops at the same time, the reports now received show that there is unanimity of opinion to the effect that Government should not interfere with a view to discourage the growth of other crops with wheat. Cultivators are not indifferent to the advantages of producing clean grains, but they prefer to grow mixed crops with a view to secure a better outturn, and at the same time to guard against the risk of failure to which they would be liable by growing an unmixed crop. The advantage from the cultivator's point of view of sowing wheat alone is not clear, for by growing a double crop he gets a chance of securing something if the wheat fails, and moreover, when a deep-rooted crop like wheat is grown with a surface feeder like barley, each stalk of wheat has a larger area for its

Reasons for mixed crops.

roots, and the grains are likely to be fuller and heavier than if only wheat were sown. For these reasons it would appear that the active interference of Government officers with a view to discountenance the practice of growing other crops simultaneously with wheat is not warranted. All that officials can safely do in this direction is to circulate information showing the prices which may be realised in Calcutta for entirely clean and for impure grain respectively, leaving it to cultivators themselves to determine whether the reasons in favour of growing a mixed crop outweigh those in favour of growing wheat alone. The strength and force of these reasons will, as shown later on, entirely depend on the efficacy of any action which the Chamber of Commerce may find it possible to take towards altering the present system, under which a uniform minimum standard of refraction is adopted by the exporters in Calcutta.

Interference by Government.

Deliberate adulteration.

5. With regard to the third cause given for the impurity of Indian wheat, namely, deliberate adulteration on the part of middlemen or cultivators by admixture of dirt, an opinion was expressed in my letter of September 2nd, on which comment was invited from the Chamber of Commerce to the effect that the real reason why Indian wheat is adulterated by admixture of foreign substances lies not in defectiveness of winnowing arrangements, but in the fact that it is not to the cultivator's interest to produce entirely clean grain; for so long as a minimum of 5 per cent. refraction is deducted by exporters in Calcutta, it is evident that it is the interest of the producer to mix dirt with the grain to that extent at least. It was suggested that the remedy therefore lies, not in the introduction of better winnowing arrangements so much as in the alteration of the present system of deductions for refraction. A very remarkable confirmation of this view is afforded by Mr. Allen's interesting report, which I quote at length on this point:—

Its causes.

"Similar arguments," he says, "apply to adulteration of mud, etc. These, I believe, the ryot does not add wilfully, because the bepari or petty trader to whom he sells would detect them in his small consignment and pay him an inferior price. On the other hand, the petty trader does not insist on cleaned grain, for he will not himself sell grain containing less than 5 per cent of impurities, which, if deficient he will add; for so long as the Calcutta merchants accept 5 per cent as refraction, it would not pay the bepari to sell grain with only one or two per cent. of adulteration. This brings me to the real point of the whole question. It is purely a case of supply and demand. If the Calcutta merchants insisted on cleaned grain, they would get it. They do insist on clean samples in the case of linseed, and the result is that linseed is cleaned by the actual cultivators before being sold to the petty dealers. The same result would, I believe, follow in the case of wheat. As matters now stand wheat in Patna is freely adulterated. Ralli Brothers in Patna City deal only with the petty dealers, and these refuse to give any guarantee with the wheat sold. Each lot has to be tested both for impurities and for the percentage of red grain before the price is fixed. If the samples tested happen to be superior to the bulk, the bepari gains. If they should be inferior, the bepari can refuse to deal, and so he cannot lose either way. The cultivators never get a fair price, for the brokers and the aratdars have each to get their commissions on each transaction between the bepari and Ralli Brothers. In some marts where the grain comes chiefly from the neighbourhood it might be possible for Ralli Brothers to deal directly with the actual cultivators; but in Patna, where the grain comes largely from Gorakhpore and Fyzabad, this is impossible, and the agent for Ralli Brothers is compelled to deal with the petty dealers, whose interest it is to cheat him if they possibly can.

"Since writing the above, I have had a remakable confirmation of these views from the Manager of the Dumraon Raj, the Hon'ble Joy Prokash Lall. The statements he made were so significant that I took a note of them at the time, and at the

same time informed him that I should embody them in this report. The Manager said that about two years ago, when the prospects of the wheat trade were apparently good, he seriously thought of cultivating wheat on a large scale. He estimated that on the Raja's estates there were 300,000 acres of land capable of growing wheat, and he proposed commencing operations with a capital of two lakhs. His idea was to induce the ryots to grow wheat alone by means of advances in coin and seed, and he intended purchasing machinery, such as he had seen at the Calcutta Exhibition, for cleaning the grain. All that he now required was a remunerative market. Last year, when in Calcutta on Council business, he called at the office of Ralli Brothers, and after telling them his plans asked what price they would give for clean grain. *Ralli Brothers informed him that owing to the action of the merchants in England they could not afford to pay more for a clean sample than they now did for grain with 5 per cent. refraction. Upon hearing this the Manager abandoned the idea of growing and cleaning wheat on a large scale.* It is difficult to overrate the significance of this anecdote, which appears to prove conclusively that so long as merchants will not pay a higher price for clean grain, it is useless for Government to think of inducing cultivators to change their present practice. Evils of refraction system.

"I then asked the Manager about wilful adulteration. He said that he had a gola at Itarsi, near Buxar, from which he used to sell wheat on rather a large scale to the agent of Ralli Brothers at Buxar. The wheat as he got it did not contain 5 per cent. of foreign matter. Accordingly, his servants were directed to mix two maunds of earth with every 100 maunds of grain, so as to bring the adulteration up to the required standard. This earth was treated with water and specially prepared for the purpose of adulteration. The suggestion for adulterating the grain in this way came, as the Manager says, from the employés of Ralli Brothers. This fully bears out what Major Boileau says, that grain-dealers in Dinapore wilfully adulterate their grain, adding about two maunds and thirty seers of dry clay, bhusee, and other grains to every hundred maunds of wheat. Mr. T. Gibbon, C.I.E., the Manager of the Bettiah Raj, told me that wilful adulteration was practised by the petty dealers in Chumparun, and Mr. Carnduff writing from Hajipore, a large grain mart, says:—'In the hands of the middlemen, when the grain is lodged in their golas, such grains as *akla pipra* are, I understand, intentionally added with a view to adulteration' Mr. Jenkins from Buxar, who has clearly paid a good deal of attention to the subject is of the same opinion.

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"Messrs. Mylne & Thompson have pointed out to me that adulteration of *gúr* is analogous to the adulteration of wheat. When their sugar-mills were first introduced, they were valued by the purchasers on account of their saving labour, and not because they turned out a cleaner article. Even now the Bunniahs in Jugdispore refuse to pay a higher price for *gúr* free from adulteration, and though the cultivators *can* produce clean *gúr*, and *will* do so if required, it does not pay them to clean the *gúr* they sell in open market. There is now, however, a tendency among European firms to pay a higher price for purer *gúr*; similarly, if the merchants would reduce their standard of refraction, they would get cleaner samples of wheat. This question is treated exhaustively in the report from Shahabad, and it is so difficult to make extracts without omitting something of interest that I venture to suggest that the whole report be sent in original. The possibility of cleaning grain with the ordinary tray-shaped fan (soop) is pointed out by the Collector of Sarun, and in the report from the Patna district."

6. As regards, then, the alleged imperfection of present arrangements for winnowing, it will thus be seen that the mixture of dust from the threshing-floor forms a very small portion of the impurities found in Indian grain, and that the present arrangements for winnowing are as good as can be hoped for under present conditions. It will of course be desirable to effect improvements in winnowing and threshing should any be found possible; but the root of the evil complained of can only be reached by the abolition of the system of deducting a minimum refraction of 5 per cent.—a remedy which lies in the hands of the merchants themselves. The facts mentioned by the Manager of the Dumraon Raj show conclusively that clean grain will be forthcoming if the merchants Remedy lies with the Trade.

pay for it, and that it will not be forthcoming, however perfect the winnowing and threshing arrangements may be, so long as a minimum of 5 per cent. is deducted for impurities, be the samples ever so clean.

Reply of Calcutta Chamber of Commerce.

7. These facts and arguments have been brought to the notice of the Calcutta Chamber of Commerce, who, while not denying their force, express regret that they are unable in the present state of the trade to alter the existing practice in this respect. As long as that practice continues, it would appear to me to be futile for Government officers to talk to cultivators of the advantages of producing entirely clean grain. On the contrary, if Government officials interfere at all in the matter, it should be by explaining to the cultivators that it is their interest to mix at least 5 per cent. of foreign matter with clean grain before offering it for sale.

Messrs. Reinhold's scheme impracticable.

12. With reference to Messrs. Reinhold Brothers' scheme for the provision by Government of facilities for storing wheat near railway stations where the grain might be cleaned and graded on the American system, there is unanimity of opinion adverse to the proposal. I agree in the view that it is impracticable and inexpedient to establish grading warehouses in the manner suggested, and concur with the Director of the Agricultural Department of the North-Western Provinces in thinking that if any such action as is suggested by Messrs. Reinhold Brothers is to be taken, it is precisely the kind of thing which ought to be done by private agency, and in which Government should not interfere unless the Chamber of Commerce find they are unable to insist on proper arrangements. In the present instance the Chamber are opposed to such interference, and no complaints are anywhere made of the insufficiency of the present storage accommodation at railway stations. The East Indian Railway authorities, it may be added, have recently reduced the freight rates from Patna, which now amounts to one-sixth of a pie per maund per mile. It will be seen, however, from the annexed list that while the freights from Patna have been reduced by more than 20 per cent. within the present year, no corresponding reduction has been made in freights from Dumraon and Buxar, from which stations local wheat should be largely exported.

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Director, Department of Land Records and Agriculture, to Assistants to Director, Nos. 414-16, dated 2nd September 1885.

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Causes of impurity of Indian wheat.

The first question to which attention is called is the necessity of obtaining clean grain for export. It will be seen from the papers that the mixture of foreign matter in the wheat now sent to Calcutta for export is said seriously to depreciate its price, thus affecting unfavourably India's ability to compete successfully with America, Australia and other countries, and ultimately injuring the producers. The impure condition of Indian as compared with the wheat of other countries is attributed to one or more of the three following causes :—

1st—The mixture of other grains due to the practice of growing two or more crops on the same land at the same time.

2nd—Imperfect arrangements for winnowing the grain and removal of extraneous matter.

3rd—Deliberate adulteration by traders, brokers or others.

2. As regards the first of the causes enumerated above, it will be observed that the Bengal Government * * * * * desired these officers to issue instructions to Collectors of wheat-producing districts, in accordance with the wishes of the Government of India, to impress on wheat growers the importance of preventing the admixture of other grains with wheat, and at the same time called upon them to report the action which Collectors might take in the matter. The Commissioners generally reported, in reply, that little could be done in the matter, and added that all that was possible would be done in making known to the cultivators the importance of keeping their wheat free from foreign substances. The Assistant Commissioner of Palamow went further than this, and promised that he would endeavour to persuade cultivators to sow their wheat by itself in the course of his next cold-weather tour, while the Commissioner of Patna submitted for the approval of Government a draft circular which he proposed to issue to zemindars, patwaris, and others, pointing out to them the disadvantage of growing wheat in the same fields as other grains. Attention has, however, been called since that time to the circumstance that the cultivator, in growing oilseeds or other crops with wheat, selects such crops as are likely to succeed in a drought when wheat fails, and thus protects himself against the risks of an unfavourable season. Bengal wheat contains a large admixture of linseed, stones and mud. The standard of refraction in Calcutta being 5 per cent., any refraction there may be over and above this standard is deducted from the value of the parcel. If, for example, the refraction is 8 per cent., a deduction is made of 3 per cent., but it is to be remembered, on the other hand, that as 5 per cent. is ordinarily deducted, it is doubtful whether cultivators would, under existing arrangements, derive any benefit from the production of entirely clean grain, or grain in which there may be less than 5 per cent. of foreign matter. It is found in the trade that mud can be got rid of, but there is no process known by which linseed or barley can be separated from the wheat, and hence it happens that parcels containing an admixture of mud sell better in the London market than parcels containing an equal weight of admixture of other grains. It is to avoid this admixture that merchants agitate against the simultaneous growth of two or more crops with wheat in the same field. 1st cause.—Mixed crops.

2 (*a*). The advantage of producing clean wheat would, as a matter of course, be represented by the smaller refraction of say 2 per cent. which might be charged on pure wheat, if it could be generally procured, instead of the ordinary refraction of 7 to 10 per cent., but it is yet to be shown that any appreciable part of this advantage would reach the cultivator as long as a uniform minimum standard of refraction is adopted by the exporters in Calcutta. That, then, the growth of other crops simultaneously with wheat in the same fields is, under all circumstances, to be deprecated does not appear to be a conclusion so obviously certain *à priori*, or so firmly established by the results of experience as to warrant, for the present at all events, the active interference of Government officers in discountenancing the practice. In the present state of

our knowledge on the subject, all that seems desirable to do would appear to be to point out to the cultivator the advantages, such as they are, of producing clean wheat, and of separating the hard and soft and the white and red grains in the selection of seed, and to leave it to him to determine whether the reasons for growing a mixed crop are outweighed by the reasons for growing it alone. The question, however, is one which demands further enquiry, and I request that you will give it your attention and report upon it in due time.

3. With reference to the second cause given for the impurity of Indian wheat, namely, the defectiveness of existing arrangements for winnowing, I would invite your attention to the remarks made in paragraph 5 of the Proceedings of the Punjab Government. It is there stated that the suggestion has been made that it might not perhaps be beyond the "ryot's means to thresh his wheat on a wood, canvas, or matting floor, and that a common fan would be far more efficacious than winnowing the grain by exposing it to the action of the wind by pouring it out of a basket or tray."

4. The Punjab Government is, however, of opinion that little in this direction can be expected from the cultivators, and it looks mainly to the traders to provide cleaning or winnowing machines. It appears certain that nothing can be hoped for in this matter from ordinary cultivators, at least until it can be clearly shown them that they would derive any adequate advantage from the production of entirely clean grain. The fact would seem to be that the impurity of Indian wheat is due to deliberate adulteration by brokers and traders as much as to admixture of foreign grains or imperfect winnowing on the part of the cultivators. If, however, anything is to be done in the direction of introducing better arrangements for cleaning the grain by winnowing machines or otherwise, the agency through whom the attempt must be made is that of zemindars, village headmen, or the grain-dealers themselves.

Messrs. Reinhold's scheme.

7. In paragraph 4 of the letter from the Bengal Government and paragraph 11 of the Resolution of the Punjab Government is discussed a proposal made by Messrs. Reinhold of Cawnpore to establish a system of inspecting and grading wheat similar to that adopted in America. The proposal does not receive, it is believed, much favour from the Calcutta Chamber of Commerce, but the question of the establishment of such a system in Patna, from which some 13 lakhs of maunds are sent annually by rail to Calcutta—a quantity which is more than double that consigned from Cawnpore or any other station in India—is one on which Mr. Allen is requested to report fully, after communication with persons interested in the wheat trade in Patna. The special officer of the Bhagulpore Division should make similar enquiries regarding the expediency or otherwise of establishing a similar system in Bhagulpore or Monghyr, from which large quantities are sent by boat. In connection with this subject agricultural officers are requested to enquire into the sufficiency of the existing accommodation for storage of wheat at or near railway stations; to what extent, if any, inconvenience or loss is now caused by the insufficiency of such accommodation; whether it is necessary or desirable to establish warehouses in the way suggested, near railway stations, or in the gunges or marts by the river-side, whence the wheat

is shipped, and if so, whether it would be feasible to make arrangements for cleaning the grain stored in such warehouses.

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16

Mr. D. B. ALLEN, *Assistant to Director, Department of Land Records and Agriculture, to Commissioner, Patna Division, dated 2nd December 1885.*

I have the honour to submit a report on the wheat cultivation of this division. My information is derived from reports submitted by each Collector, and by the Chairmen of Mozufferpore, Gya, Arrah and Durbhunga, and also from independent sources.

Before giving my own views, which, so far as Patna is concerned, are embodied in the report by the Collector of the Patna district, I will here summarise some of the reports to which I have had access

Abstract of Collectors' replies Patna Division

2. The Collector of Chumparun (Mr. Henry) forwards a resolution passed by the Municipal Commissioners of Motihari, deprecating the construction of a central warehouse for grading wheat, and points out that very little wheat is exported, and that little more than 5 per cent. of the cultivated area is grown with wheat.

The Collector of Mozufferpore, Mr. Norman, with whom the Municipal Commissioners agree, thinks that interference on the part of Government with wheat cultivation or trade would be a mistake, and points out that there is little or no export from the district. He also forwards reports from the Sub-divisional Officers and from a Deputy Collector and kanungo which do not require any special comment.

The Collector of Durbhunga, Mr. Price, as Chairman of the Municipality, is in favour of establishing warehouses near railway stations for storing and cleaning grain, but in another report as Collector, he states that Messrs. Reinhold Brothers' scheme does not commend itself to the trading community at Durbhunga, because it will greatly add to the charges incurred by the native merchants in dealing with European firms, and besides having got their certificate, the storage charges will hurry the market.

The Collector of Sarun, Mr. Forbes, in a report founded apparently solely on personal enquiries, points out there is no export trade, properly so called, in wheat, the only business of the kind being merely a transhipment trade at Revilgunge and Chupra, where a considerable portion of grain traffic from the North-West Provinces changes hands on its way down the Gogra to Lower Bengal, the remaining portion being retained for consumption in the Sarun District. He disagrees with Mr. MacDonnell's view that there should be an average annual surplus of 20,000 tons of food-grains available for export from this district, holding that the annual supply is not even enough for the local demand. Finally, he is averse to the establishment of central warehouses even at Revilgunge, as there are already private golas there where the merchants clean their own grain as much as they think desirable.

The Collector of Gya, Mr. Norton, and the Chairman of the Gya

Municipality are both averse to warehouses, as there has been no export from this district for over two years, and besides, in the Collector's opinion, *kewal* land on which three-fourths *bis* of the wheat is sown is not suited to growing white wheat.

The Collector of Patna, Mr. Quinn, agrees with me in thinking that central warehouses are a mistake, and though Major Boileau from Dinapore is in their favour as a means for securing a clean sample, he admits that the scheme would cost a great deal of money.

The Collector of Shahabad, Mr. Power, submits a very interesting report embodying lengthy extracts full of valuable information from his Sub-divisional Officers, Messrs. Jenkins and Macpherson, and from Mr. Peppe, Sub-Deputy Opium Agent. The Chairman of the Arrah Municipality, the Hon'ble Harbans Sahai, also submits a report in which he agrees with the Collector in thinking central warehouses unnecessary.

3. A consideration of the reports referred to above shows that from the northern half of the division there is practically no export trade in wheat, for the business done at Revilgunge has really nothing to do with the Sarun district. Again, from Gya there is now no export of wheat, and if the Collector's view is correct (of which, however, I am very doubtful), there is no likelihood of good white wheat being ever largely grown in the Gya district. Patna, too, though apparently a large exporter of wheat, really grows little more than is required for its own consumption; so the main interest of the wheat question centres in Patna City, the great wheat-distributing centre of the division, and the district of Shahabad, where wheat is grown for export, and where much of the soil is so suited for this crop that the best wheat in the Calcutta market, *viz.*, Buxar club No. 1, is named after a sub-division of this district. Fortunately the reports from Shahabad are full of interest and enable one to discuss satisfactorily the various points raised by the Government of Bengal.

Shahabad the only exporting District in Patna Division.

4. The first question to which attention is called is the necessity of obtaining clean grain for export. The impure condition of Indian as compared with the wheat of other countries is attributed, as the Director of the Agricultural Department points out, to one or more of the three following causes :—

First—The mixture of other grains due to the practice of growing two or more crops on the same land at the same time.

Second—Imperfect arrangements for winnowing the grain and removal of extraneous matter.

Third—Deliberate adulteration by traders, brokers or others.

Reasons for mixed crops.

First—All the reports show the prevalence of the practice of growing other crops along with wheat, and, as I said in my report to the Collector of the Patna District (paragraph 4), the advantage from a cultivator's point of view of sowing wheat alone is not very clear. By sowing a double crop he gets a chance of securing something if the wheat failed. Again, when a deep rooted crop like wheat is grown with a surface feeder like barley, each stalk of wheat has a large area for its roots, and the grains are likely to be fuller and heavier than if only wheat were sown. This is well known to ryots who select their grain seed from fields where wheat has been grown with barley. Then as

regards the admixture of white and red wheats, it is extremely probable that soil and climate have the effects of converting white wheat into red. Suppose a ryot pays a high price for securing a clean sample of the best white wheat seed. Unless the soil of his field is suited for the growth of white wheat, the outturn will contain a proportion of red grains, and each successive year unless fresh seed be obtained, the proportion of red to white will go on increasing. The price of pure white wheat would have to be enhanced before it paid the ryot to separate the red grains from the bulk. But what are the facts? The best wheat exported from Calcutta, *viz.*, Buxar club No. 1, contains 25 per cent. of red grains. When that is so, why should the cultivator go to the trouble and expense of selling pure white wheat when he gets the best price for white wheat mixed with 25 per cent. of red?

Reasons for adulteration.

Similar arguments apply to adulteration of mud, &c. These, I believe, the ryot does not add wilfully, because the bepari or petty trader to whom he sells would detect them in his small consignment and pay him an inferior price. On the other hand, the petty trader does not insist on cleaned grain, for he will not himself sell grain containing less than 5 per cent. of impurities, which, if deficient, he will add; for so long as the Calcutta merchants accept 5 per cent. as refraction, it will not pay the bepari to sell grain with only one or two per cent. of adulteration. This brings me to the real point of the whole question. It is purely a case of supply and demand. If the Calcutta merchants insisted on cleaned grain, they would get it. They do insist on clean samples in the case of linseed, and the result is that linseed is cleaned by the actual cultivators before being sold to the petty dealers. The same result would, I believe, follow in the case of wheat. As matters now stand, wheat in Patna is freely adulterated. Ralli Brothers in Patna City deal only with the petty dealers, and these refuse to give any guarantee with the wheat sold. Each lot has to be tested both for impurities and for the percentage of red grain before the price is fixed. If the samples tested happen to be superior to the bulk, the bepari gains. If they should be inferior, the bepari can refuse to deal and so he cannot lose either way. The cultivators never get a fair price for the brokers, and the aratdars have each to get their commissions on each transaction between the bepari and Ralli Brothers. In some mart where the grain comes chiefly from the neighbourhood it might be possible for Ralli Brothers to deal directly with the actual cultivators, but in Patna, where the grain comes largely from Gorakhpore and Fyzabad, this is impossible, and the agent for Ralli Brothers is compelled to deal with the petty dealers, whose interest it is to cheat him if they possibly can.

No demand for pure grain.

5. Since writing the above, I have had a remarkable confirmation of these views from the Manager of the Dumraon Raj, the Hon'ble Jai Prokash Lall. The statements he made were so significant that I took a note of them at the time, and at the same time informed him that I should embody them in this report. The Manager said that about two years ago, when the prospects of the wheat trade were apparently good, he seriously thought of cultivating wheat on a large scale. He estimated that on the Raja's estates there were 300,000 acres of land capable of growing wheat, and he proposed commencing operations with a capital of two lakhs. His idea was to induce the ryots

to grow wheat alone by means of advances in coin and seed, and he intended purchasing machinery such as he had seen at the Calcutta Exhibition for cleaning the grain. All that he now required was a remunerative market. Last year, when in Calcutta on Council business, he called at the office of Ralli Brothers, and after telling them his plans asked what price they would give for clean grain. Ralli Brothers informed him that owing to the action of the merchants in England, they could not afford to pay more for a clean sample than they now did for grain with 5 per cent. refraction. Upon hearing this the Manager abandoned the idea of growing and cleaning wheat on a large scale. It is difficult to overrate the significance of this anecdote, which appears to prove conclusively that so long as merchants will not pay a higher price for clean grain, it is useless for Government to think of inducing cultivators to change their present practice.

Causes of adulteration.

6. I then asked the Manager about wilful adulteration. He said that he had a gola at Itarsi, near Buxar, from which he used to sell wheat on rather a large scale to the agent of Ralli Brothers at Buxar. The wheat as he got it did not contain 5 per cent. of foreign matter. Accordingly his servants were directed to mix two maunds of earth with every 100 maunds of grain, so as to bring the adulteration up to the required standard. This earth was treated with water and specially prepared for the purposes of adulteration. The suggestion for adulterating the grain in this way came, as the Manager says, from the employés of Ralli Brothers. This fully bears out what Major Boileau says that grain dealers in Dinapore wilfully adulterate their grain, adding about two maunds and 30 seers of dry clay, bhusee and other grains to every hundred maunds of wheat. Mr. T. Gibbon, C.I.E., the Manager of the Bettia Raj, told me that wilful adulteration was practised by the petty dealers in Chumparun, and Mr. Carnduff, writing from Hajipore, a large grain mart, says: "In the hands of the middlemen when the grain is lodged in their golas, such grain as *akta pipra* are, I understand, intentionally added with a view to adulteration." Mr. Jenkins from Buxar, who has clearly paid a good deal of attention to the subject, is of the same opinion.

7. As regards imperfect arrangements for winnowing, further enquiries have only confirmed the view expressed in paragraph 5 of my report to the Collector, that the present plan is quite good enough under present circumstances. The admixture of dust from the threshing floor even now forms a very small proportion of the adulteration eventually found in the grain, and with greater care it might be reduced still lower.

Merchants should encourage reform.

8. Messrs. Mylne and Thompson have pointed out to me that the adulteration of *gúr* is analogous to the adulteration of wheat. When their sugar-mills were first introduced, they were valued by the purchasers on account of *their saving labour*, and not because they turned out a *cleaner* article. Even now the Bunniahs in Jagdispore refuse to pay a higher price for *gúr* free from adulteration, and though the cultivators *can* produce clean *gúr*, and *will* do so if required, it does not pay them to clean the *gúr* they sell in open market. There is now, however, a tendency among European firms to pay a higher price for purer *gúr;* similarly if the merchants would reduce their standard of refraction, they would get cleaner samples of wheat. This question is treated exhaustively in the report from Shahabad, and it is so difficult to make extracts without

omitting something of interest that I venture to suggest that the whole report be sent in original. The possibility of cleaning grain with the ordinary tray-shaped fan (soop) is pointed out by the Collector of Sarun and in the report from the Patna district.

* * * * * *

11. One other point that I wish to refer to is the uncertainty of the wheat trade. The exports from Bengal and Behar stations, which exceeded 56 lakhs in 1881-82, fell to 26 lakhs in 1882-83, and then rose to 38 lakhs in 1883-84. Since then the trade in wheat has been remarkably dull. The improvement in 1882-83 tempted the Manager of Dumraon Raj to consider seriously the advantages of growing wheat on a large scale. In the present state of the market nothing would induce him to embark on such a speculation, and nowhere in the division is there any land-owner who ceases to grow wheat on a large scale.

Uncertainty of wheat trade.

12. Are we then to resign ourselves to a policy of inaction? I think not. Competent values have proved that Behar can produce wheat that can compete successfully with grain grown in Russia or America. The comparatively low price at which Indian wheat sells is admittedly due to adulteration. We have proved that this adulteration is not due to the negligence or wilfulness of the actual cultivator. It is not inevitable owing to his system of cultivation. It is, I maintain, mainly due to the 5 per cent. standard of refraction. It is no use preaching to the cultivators. They will provide clean grain if the merchants will pay them for it, and there is grain of good quality in the division whose cultivation can be widely extended, provided the merchants will pay a better price for good quality. As it is, the best price is paid for Buxar club No 1, which contains 25 per cent. of red grains and 5 per cent. of adulteration, and for part of year another 1 per cent. is allowed for weevilled grain.

Refraction standard the cause of present evils.

The action of the Calcutta merchants, which depends on the English market, can only be explained on the theory that they have not realised that adulteration is wilful and not due to the native modes of growing and cleaning grain. If Government can bring this fact home to the merchants in a way that will induce them to lower their standard of refraction, and to insist on a higher percentage of white grain, there is every probability that there will be a revival in the wheat trade. The Manager of the Dumraon Raj is not the only man who would gladly grow wheat on a large scale provided he could get a remunerative price, and by diminishing the number of middlemen, the actual cultivator would get a much larger share of the profits. At present the small cultivator is at the mercy of the bepari or petty dealer. He may stand out for a time, but when he must have money to pay his rent he is obliged to come to terms with the bepari. Even the bepari does not (at any rate in the Patna City) gain the bulk of the profits, for before he can deal with the agent of Ralli Brothers, commission must be paid to the brokers and to the aratdars when the grain is stored. Consider, too, the labour now expended in wilful adulteration, and the freight that is paid for the carriage of dirt. The actual condition of the trade is almost incredible; but the reports that have been received from every district in the division bear out the facts referred to above, and it is noteworthy that those who have given most attention to the subject all agree that it is the merchants, and the

Mercantile community responsible.

merchants alone, who are responsible for this deplorable condition of affairs.

17

Officiating Collector, Shahabad, to Commissioner, Patna Division, No. 1826 G., dated 10th October 1885.

I have the honour to submit the following report on the cultivation and trade in wheat in this district.

2. What follows is the substance of a note by Mr. T. F. Peppe, of the Opium Department, a gentleman who has made the wheat trade a subject of special enquiry, together with reports from the Sub-divisional Officers of Buxar and Sasseram.

3. Regarding the district in general, Mr. Peppe writes thus :—

Wheat cultivation in Shahabad.

"There are two principal tracts in which wheat is largely grown in this district; the first is the alluvion soil called the deara, extending from Buxar to the one and reaching a maximum breadth of 10 to 5 miles, with a length of, say, 40 miles, thus including less than 400 square miles. This is the tract in which the beautiful soft white wheat is grown; the land is a rich alluvium annually enriched by the overflow of the Ganges: it is needless to say that no manure is required in this soil for the finest wheats, and that it is in this tract possible to grow as fine wheat as anywhere in India; unfortunately it is in this very tract that the cultivators sow three or four and even more crops in the same field, and this is a fertile source of dirty grain, as when reaped separately they are very often pulled out by the roots not cut, and this carries an unusual amount of dirt with the grain on to the threshing floor, but it can be easily separated if the ryot chooses to take the trouble. From what I can gather, about 40 per cent. of the best wheat comes from this tract. The next in importance is the black clay soil extending from the eastern part of the Sasseram sub-division well into the Bhabooah sub-division, and extending from the Grand Trunk Road on the one side, and on the other to within 15 miles of the Ganges, say, 25 miles × 20 miles = 500 square miles.

"In this tract some of the finest wheat is grown, about 50 per cent. of the whole outturn of the district; the cultivators attempt to keep their seed pure white, but there is a tendency to revert to the red variety: the cultivators tell me that there is no market for red wheat, and that they endeavour to produce a pure white soft wheat without admixture of any kind, and sow it entirely by itself, only a little linseed is sown round the margin of the field, and the whole *rubbee* cultivation in some villages in this tract is confined to wheat and linseed, with small patches of barley and other crops for home consumption. The wheat from this tract, although very good, is not equal to the wheat grown on the alluvium lands, and sells for one to two seers less in the rupee. The third principal cultivation of wheat is the koeries and others amounting to about 5 per cent., who sow on dih* lands all over the district, one bigha or so at a time on rich dih land well manured and irrigated. This is probably as fine grain as could be produced in this district, and the only improvement that could be effected would be by sowing a better class of seed, which the koeries and others would be very glad to do; as it is they carefully select their seed and endeavour to get rid of all bad grains before sowing. There is a fourth source of wheat, *viz.*, the small patches of wheat sown in good soil at the foot of the hills or in the valleys or local alluvium along the banks of the smaller streams; this does not amount to more than 5 per cent. of the wheat grown in the district, and is very variable in quality, a large proportion being red wheat in the south of the district. With regard to the question of increasing the cultivation, the whole of the deara lands could be sown year after year with wheat without any loss in quality, for the land is annually renewed by a rich deposit, and therefore the produce of this tract could be enormously increased, and no doubt the time will come when the value of a well-bred wheat crop, free from earthy particles or any other kind of grain, will be as well known to the wealthy cultivator of the deara

* Lands adjoining the village-site.

as to the British farmer. At the present time a ryot who holds 100 bighas sows 20 in peas, 10 in barley, and the rest 70 bighas in grain* and wheat mixed. Their argument is this: suppose that 10 bighas wheat and 10 bighas grain were sown separately, if either the grain or wheat failed, there would only be 10 bighas full and 10 empty; whereas in the other case the whole 20 bighas would be under a crop, and although thinly sown it would spread and fill the whole field, and give a much better crop than a thickly sown one of 10 bighas; they have no crop that could be sown on the empty field, so that there is no probability whatever that this practice will be abandoned; at present 6 punchseeries of wheat to 3 of grain is sown, and the produce is in a favourable season 18 maunds wheat 5 maunds grain.† At the time of selling grain to the mahajun or travelling bepari the custom is to clean a measure of wheat, to take the dust and earth out of this quantity and add it to the weight they are weighing with, usually a punchseeri, and in this way the bepari buys the clean grain only. If the bepari had instructions from his mahajun to buy clean grain only, then the whole would be cleaned, and there would be very little mud or dirt left in it. All that is required to secure clean wheat is therefore a combination among the exporting firms in Calcutta not to purchase wheat unless it is clean, say, 1 per cent. refraction or whatever is found a practicable percentage. The cultivators will then supply clean wheat: no machinery is required by them; they will clean it by a sieve and by soop,‡ and the mahajun will at the same time clean his wheat before despatching it by rail: many of them do so now, and if the exporting firms in Calcutta would only insist on clean wheat, clean wheat would be the rule. Ordinary wheat brought as it comes from the district contains 6 per cent. on an average of impurities, 3 per cent. being grains and seeds of kinds, and 3 per cent. earthy particles: the whole of this can be taken out of it at a cost of 6 pies per maund. and there will be a gain of 3 seers of grain and seeds, which will bring 3 pies, so that the actual cost is not more than 3 pies per maund for labour and the cost of 3 seers less grain, which at 18 seers for the rupee would cost 2 annas 8 pie per maund, making the total cost 2 annas 11 pie per maund, or in round figures 3 annas per maund. The grain-dealers in Arrah say that it is already the custom to clean the wheat before despatch to Calcutta, and in the case of linseed, the custom is universal, and no uncleaned linseed is despatched; there are two large godowns in Arrah where the linseed is cleaned by European appliances imported at considerable cost in order to get it thoroughly cleaned, and if this has been done for linseed, it follows that the same could be done for wheat. Even the travelling bepari who buys the linseed from the cultivators has it cleaned before buying it, not as in the case of wheat taking an allowance for the dirt. The grain-dealers in Arrah and the cultivators declare that there is no difficulty whatever in cleaning wheat, and that if clean wheat was purchased and no other, the whole would be cleaned. One advantage in despatching clean wheat is the percentage given by the railway for wheat put up in double bags ready for export. Nothing will be done unless the merchants themselves supply the motive power by refusing to purchase anything but clean wheat; this done, all the rest will follow. I do not think the export of wheat or any other grain could be facilitated by any measures that Government could undertake: the custom is for the bepari to go round the villages and collect the wheat from the cultivators and carry it off on pack-bullocks, and he has therefore to leave the roads entirely and carry it across country to the railway, and roads of any kind cannot affect the trade to any great extent. At present there is no good metalled road leading to the black clay soils which I have described above as being the largest wheat-producing tract in this district; and if the present road leading from Chowsa to Jehanabad on the Grand Trunk Road was metalled, it might do good. The traffic at present is entirely by pack-bullocks. The scheme proposed by Reinhold Brothers is more applicable to large stations than to the small stations in this district; but of late years the natives are building golas near all the railway stations, and if land was made available on easy terms, they would be still more largely used, and at these golas the cleaning and packing would be carried on as at present preparatory to despatch by rail. Government might through the officers give facilities for taking up lands in the vicinity of stations on the line of railway for the purpose. Beyond this, I do not know of anything that

Mixed crops.

Pure wheat procurable for better prices.

Cleaning of wheat.

Government measures for improvement of wheat trade.

* Chick pea.

† Per local bigha = ⅓ of an acre.

‡ Winnowing fan of bamboo, tray-shaped usually

could be done. I had an opportunity, while at Dumraon Exhibition last cold weather of going over the exhibits of wheat at the show, and was very pleased to see that some of the samples of wheat were of a very high quality, and compared favourably with the wheat from other districts, and I feel sure that if good wheat for seed purposes could be made easily available, say at sub-divisional head-quarters, some good might be effected. The eagerness with which the ryots present at Dumraon asked for small samples of improved varieties of seed was very marked, and I find the koeries in this district very much alive to the advantages of good seed."

4. The best wheat in India takes its name from Buxar (Buxar club No. 1). Mr. Jenkins reports as follows:—

"Attention is drawn first of all to the necessity of obtaining a clean wheat for export. The principal causes of impurity are stated to be—

(*a*) The practice of growing two or more crops on the same lands.
(*b*) Imperfect methods of winnowing grain.
(*c*) Adulteration by traders.

Grains sown with wheat.

As regards the first point, it is the practice here to sow *sarso* (mustard), *kasum* (safflower), linseed, and grain with white wheat, but at the same time in villages where the latter kind is especially grown, it is also sown as a single crop by big cultivators. Detailed statistics could be procured near *rabi* season as to the area under wheat only. The cultivators are alive to the advantage of growing it singly, but from fear of drought or blight they are afraid to trust to one crop only. Again as long as the standard of refraction in Calcutta is 5 per cent., the cultivators would not gain by sending cleaner grain because the traders would at once adulterate it up to the authorized standard. The admixture of *kankar* is especially objected to, because it damages the mills in England. Linseed is objected to in a lesser degree, while other grains, like gram and barley, are hardly objected to at all, because they can be absorbed in bread-making. To avoid the admixture of *kankar*, Messrs. Ralli Brothers (who buy wheat as far as Moghul Sarai) insist on absolutely clean parcels—a condition which forces beparis and cultivators to take more pains in cleaning their grain. As regards the second cause of impurity, as long as the present method of winnowing by a soop, *i.e.*, basket, exposed to the wind is the cheapest, it is out of the question to try and induce the cultivators to adopt any other method. It is for the trade to introduce winnowing machines.

Winnowing machine.

Trade opposed to clean wheat.

Thirdly, as regards adulterations, beparis and traders deliberately practice this. If a bepari or trader buys from cultivators wheat with only 3 per cent. of admixture of extraneous matter, he would lose 2 per cent. in exporting to Calcutta, unless he added more dirt to meet the 5 per cent. allowance. Again, as the grain must necessarily be often imperfectly tested in Calcutta, traders add dirt which will be equivalent to 7 or 8 per cent. on the chance of not being found out. It is at present the interest of most traders not to export clean grain, and consequently they are not in favour of cleaning godowns at stations. The only remedy is to lower the standard of refraction or for the merchants in London to buy only clean grain. I believe that it is the policy of Messrs Ralli Brothers only to export clean parcels.

Warehouses.

Lastly, as to the question of establishing warehouses at stations.

It has already been pointed out that as long as the standard of refraction is 5 per cent. in Calcutta, it is not to the interest of the petty trader to send clean grain at a lower rate of refraction; consequently petty traders, besides objecting to pay any charges, would prefer not to clean the grain that they export. Again, large firms like Messrs. Ralli Brothers, who do export cleaner grain, prefer to make their own arrangements. The matter is really in the hands of the trade, to whom it should be left."

5. Sasseram sub-division has been noticed in the general remarks on the district. Mr. Macpherson gives the following detailed facts:—

"The extension of canal irrigation in this district has led to the growth of winter rice at the expense of wheat, especially where the soil is of a light loam or sandy.

The western half of the Sasseram sub-division consists, however, of a black heavy loam or clayey soil known as *karail*, which, when wet, is difficult to work for paddy cultivation; but its retentiveness of moisture renders it admirably adapted for the growth of wheat, which accordingly forms the staple crop of that part of the country. The land intended for wheat is for the most part ploughed up about the beginning of the rains and allowed to be in open fallow until they cease, several additional ploughings being given in the interval. It is, however, sometimes grown after a crop of early rice, or, where the soil is light, as in the north of the district, after maize; but in such cases it naturally does not succeed so well. Manure is not used, except sometimes by koeries, who apply old cowdung about the beginning of the rains. The seed is sown by drill, about 1¼ pucca maund to the acre. There are two varieties of seed sown, the white (*dandia*) and red (*lallka*). They are generally grown mixed together. The white seed, owing to the character of the soil in the Sasseram sub-division, is apt to turn red in time, and has to be replaced by fresh white seed every few years. On the heavy *karail* lands the seed is not often mixed with that of other crops, but linseed is often grown round the borders of the fields, and in strips here and there through them. Barley and wheat are often grown together as a mixed crop on the lighter soils, and sometimes grain and peas are also sown with the wheat. The crop hardly requires any irrigation at all on the heavy soil characteristic of the west of the sub-division, as the soil itself is so retentive of moisture. The crop is benefited, however, by showers just before it comes into flower. Thereafter the west winds of March are very beneficial to it. Reaping is done by the sickle, and the sheaves carried to the threshing floor when they have thoroughly dried; the grain is trodden out by bullocks, and afterwards winnowed by being shaken in a basket (soop), of the shape of a household dust shovel, exposed to the high west wind which usually prevails at that season. From the above description, it will be observed that there is every chance of the grain, when it comes from the threshing floor, being found to be a mixture of white and red wheat, and also to have a large admixture of the dust of the threshing floor. Both form serious defects in grain intended for the European market. The winnowing basket, however, removes a very large portion of the dust of the threshing floor, and it is almost hopeless to expect that it will ever be replaced in the hands of the cultivator by any of the winnowing machines now available. The cheapest and best of these—the Cawnpore Farm combined winnower and grain separator—is too dear; the additional price obtained for clean grain from this district would not recoup its cost. As for the mingling together of different varieties of wheat, even the grain dealers here would not buy the red wheat by itself. They say that they could get no sale for it in the Calcutta market. It is true that the red variety is more prized for local consumption, being considered more palatable, but in view of the unsuitability of the soil to white wheat, it would be impossible for the cultivator to dispose of all his red wheat so long as it does not command a remunerative price by itself in the Calcutta market. The higher value of white wheat for export—2 annas a maund more than for red—is well enough known; but considering the competition of the white wheat sent from up-country, where the soil is better adapted for its growth, the cultivator would not secure a price for his white wheat if grown by itself that would compensate him for the loss he would incur in disposing of the red. The best quotation for wheat in this locality is for a mixture of 25 per cent. red and 75 per cent. white: no doubt a smaller percentage of red would command a higher price, but, as already observed, it is not practicable for the cultivator to send less to the market, so long as there is no demand for it on the part of the local agents of the Calcutta merchant. The grain exported from this sub-division is all sent to Calcutta, and chiefly to Messrs. Ralli Brothers. There is little admixture of grain or other cereals with wheat exported from this sub-division. On the heavy soils, it is generally grown by itself except for some strips of linseed, which are separately gathered without difficulty. From what has been said, it may be gathered that any measures taken to secure a purer grain must receive their initiative from the Calcutta export merchants. Until they offer a remunerative price for red grain from this district, it is hopeless to expect the cultivator to grow red and white grain separately from one another, or to take any trouble to separate them after threshing. If these merchants think that they themselves would secure a price for each class of wheat separately which would cover the cost of having them separated from one another by their own agents or employers, there is no reason why they should not have the process carried out either in Calcutta or at warehouses established at the principal railway stations to which the wheat is brought. They would probably

Wheat growing in Sasseram.

Cultivators cannot afford winnowers.

Merchants should clean grain at warehouses.

find it cheaper to have the process carried out at the railway stations, as with it could be combined the cleaning of the grain from all admixture of dirt, which would lower the cost of transport to Calcutta, and labour and warehouse room could be obtained cheaper than at Howrah. But so long as they themselves do not see their way to doing this remuneratively, it is, I think, hopeless to expect that the cultivators themselves will. There is no need to take account of the intermediaries through whose hands the grain passes. If the different varieties of wheat are not grown separately by the ryots themselves, and separated by them from all admixture of dirt and other impurities, the separating and cleaning process can best be carried out at the railway warehouses either up-country or in Calcutta. In this matter, I think Government officers can do nothing to improve the quality of Indian wheat exported to European markets. In the matter of communications also Government can do little that is feasible to assist the export of wheat from this sub-division. The whole of the wheat sent from this is exported on cargo boats by canal to Arrah. The merchants say none of it goes by road. There is a metalled road all the way to Dumraon, the nearest railway station to this, but none is sent there. They do not even send the wheat to Buxar, although they can do so by steamer or cargo boat direct. They find that the saving in railway freight makes it most profitable to send all the grain to Arrah. What they are extremely anxious to get is direct steamer communication between Bedadih beside Sasseram and Arrah. They say this would greatly facilitate their trade. The canal steamers have now been given in contract to a private individual, and no doubt if he considers that it would pay him to run a steamer direct between Bedadih and Arrah during the grain export season, the thing will be done.

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6. Not having been in the district during a cold season yet, I do not feel called on to add any remarks of my own to the information supplied by the officers beforementioned beyond expressing an opinion in concurrence with theirs, *viz.*, that if the merchants want clean wheat, they must lower the standard of refraction.

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Officiating Commissioner, Bhagulpore and Sonthal Pergunnahs, to Government, Bengal, No. 1047 C.T., dated 31st January 1886.

Bhagulpore.

I have the honour to submit the following report, after taking the opinion of the District Officers of this division, who in their turn report that they have consulted the Municipal Committees in their respective districts.

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Impure condition of Indian wheat due to crude methods.

7. From the reports received from the District Officers, it appears that the mixture of wheat with dirt and other inferior grains is caused by the crude method of cultivation followed by the agriculturists. They are too poor to afford expensive improvements, as well as conservatives in their principles. But there is no reason to suppose that they would fail to grasp the advantage to be obtained by an improved selection of seed and an improved system of winnowing, provided such improvements were demonstrated to be beneficial, and the cost were not beyond their means The Collector of Monghyr reports that wheat is sown in his district with other crops, such as gram, oil-seed, &c., in the same field, but the mixed varieties of wheat are not sown. The cultivators are not careless as to the selection of seeds, but they prefer to grow mixed crops with a view to secure a better outturn, and at the same time to guard against the risk of failure,

to which they would be liable by growing an unmixed crop. In some localities the cultivators do not grow mixed crops. The Collector of Bhagulpore gives the following reasons for the mixed varieties of wheat grown in his district:—

(1) That the cultivators, with all their experience, find it difficult to decide whether certain land would yield a good outturn of pure white wheat. In such cases they sow jamali or soft red wheat and dudhea or soft white wheat together.

(2) That when the ryots fall short of their stock of seeds, they do not hesitate to mix red with white to the extent of the shortcoming, and when the proportion of the admixture is not great, they generally entertain a hope of passing the whole produce as white wheat.

The Collector reports that instances have been brought to light in which the middle dealers in grains mix 5 per cent. of red wheat, dirt, &c., with the white wheat without any fear of being detected. Efforts are, however, being made in this district by explaining to the ryots the necessity of taking more care for the production and storage of pure and clean grain for export. The fact that the club or soft wheat commands a higher price in the market is particularly explained.

Warehouses not likely to be beneficial.

8. Almost all the District Officers are of opinion that the provision of warehouses near railway stations or other central depôts for cleaning of grain impurities will not produce any beneficial results. In the districts of Monghyr the wheat trade is chiefly in the hands of the Bengali mahajan and Marwaris. They have their principal places of business and golas or storehouses in towns, and several places in the interior of the district, where the produce is stored after being cleaned and weighed until sent off by boat or rail in bags. The Bengali mahajans generally transport their goods by country boats, which take about fourteen or sixteen days on the voyage down to Calcutta. This is a cheaper means of transport than the railway. The Marwaris, on the other hand, generally despatch their merchandise by railway. Their business is, however, not so extensive as that of the other traders. The Collector reports that, as far as the wheat and grain trade of his district is concerned, the introduction of the scheme of warehouses near railway stations, for the purpose of cleaning and classifying the wheat, would not be likely to succeed, as so much of the wheat transport is by river route. In the district of Maldah, at the beginning of the harvest, the mahajans themselves go to the interior, collect the wheat, and store it in convenient places till they load their boats for export, which then go direct to their destinations from those places. The wheat before being exported to other districts is not brought to the sudder station or to any other mart, and the establishment of warehouses in this district will therefore be of little or no advantage. The Collector of Purneah reports: "I do not think the plan suggested of making provision of warehouses near railway stations or other central depôts for cleaning wheat from impurities would do near here, as it would be expensive and throw too much responsibilities on the railway, besides interfering too much with traders." The wheat export in the district of the Sonthal Pergunnahs is too small to require warehouses. The only District Officer

who is in favour of the establishment of warehouses near railway stations is the Collector of Bhagulpore, who says that such a measure will produce good results; but I do not think that the scheme will be successful in his district, as much of the wheat is sent by river route, like in the district of Monghyr.

19

Assistant to Director, to Director, Department of Land Records and Agriculture, Bengal, No. 255, dated Bhagulpore, 30th November 1885.

Mixed crops not serious cause of impurity.

2. Of the three causes to which the impurity of Indian wheat is generally attributed, the first one, *viz.*, the mixture of other grains, due to the practice of growing two or more crops on the same land and at the same time, does not appear to be very serious. This practice is not very common. Oilseeds and gram are sown with wheat, but not very largely; and I agree with you in thinking that the advantage likely to be gained by the cultivator by the production of pure grain will not compensate him for the risk he would incur in trusting to his wheat crop alone. In *dearahs* chiefly this practice is to some extent followed; and as *dearah* wheat is of inferior quality, being *jamali* and *burgohma*, and should therefore be used for home consumption, this practice ought not to have any influence on its export trade.

With the rise in the trade of wheat, it is hoped grain of the fine, soft variety alone will be exported, and with this quality of wheat foreign grains are not often grown. In *bhita* (high land) and *chour* lands, where best *dudhea* is grown, the practice of growing mixed grains is seldom resorted to.

Winnowing should be done by local traders.

3. The second cause alleged for the impure condition of Indian wheat is the imperfect arrangements for winnowing the grain. The present class of cultivators or ryots are unable to introduce a more expensive method of winnowing grain than is in vogue at present. Possessing small holdings, they are hardly in a position to improve the existing mode, unless some cheap winnower is invented, which has not yet been done. The Cawnpore winnower, not much within the means of average ryots, has withal been pronounced a failure. I am afraid a cheap, and at the same time an efficient, winnower cannot be obtained, and expensive winnowers are beyond the means of individual cultivators. Spirit of combination is not much known out here. Grain dealers or exporters of grain are the only persons on whom, in the present state of affairs, the work of cleaning and winnowing grain naturally devolves. Then the question is whether this work should be done in capital towns or in the mofussil from where the grain is originally sent. The railway freight on goods sent by rail is not inconsiderable, and therefore it would be of much importance if the winnowing be done in the mofussil, perhaps at principal *golas* at sudder stations. The saving in railway freight to be effected by removing dirt and foreign grain before the goods are sent by rail will reduce the incidental expenses of taking the grain to the English market, and thereby increase the export trade. This work can best be done by the *goladars* and mofussil *mahajans*, or by a special firm, and I have no doubt the Agricultural Department

can do much in inducing them to undertake the work. Another plan would be to have a thrashing machine sent out from England, and on hire system the crop may be thrashed. The cost of thrashing by machine will not be much more than under the native trading system.

In England the cost of thrashing wheat comes to about 2*s.* a quarter, and in India it would be as much. If coal is dearer, labour is cheaper. Then the same operation will thrash corn and winnow it. Under the native system the exact cost of thrashing and cleaning can with difficulty be obtained. From the "Field and Garden Crop of the North-Western Provinces," issued by the Department of Agriculture and Commerce, I find the cost of thrashing and cleaning wheat for 20 maunds is put down at R3-6. A quarter is equal to six maunds, and therefore the cost of thrashing under the native system is about R1 per quarter, or 2*s.* per quarter.

4. Dealing with the third alleged cause of the impurity of the Indian wheat, I have the honour to remark that with better knowledge it is hoped this cause will cease to exist of itself. From enquiries made by me, I cannot say that any systematic adulteration is attempted by traders. Systematic adulteration not practised.

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20

Assistant to Director, to Director, Department of Land Records and Agriculture, Bengal, No. 322, dated Bhagulpore, 15th December 1886.

In continuation of my letter No. 255, dated 30th November 1885, I have further the honour of stating as follows.

* * * * * *

4. Adverting to your paragraph 7 of the letter under reply, I have the honour to submit that the scheme of inspecting and grading wheat, advocated by Messrs. Reinhold of Cawnpore, is not at all suited for the condition of the trade now carried on in Bhagulpore and Monghyr. The *goladars*, through whom this trade is carried on, have tiled sheds for storage of grain. The accommodation, though not very good, is nevertheless sufficient for purposes of giving temporary protection to the grain. The *goladars* are both brokers and warehouse-keepers. I do not think they can be induced to undertake to winnow the grain or otherwise prepare it for the English market. It is hoped something in this direction may be done in future, and perhaps the market prices supplied to us by the Chamber of Commerce, and the translation of which is distributed among the *goladars*, will have some effect in inducing them to pay some alteration to export clean grain. Messrs. Reinhold's scheme unsuitable.

21

Commissioner, Presidency Division, to Government, Bengal, No. 7 M.A., dated 27th January 1886.

With reference to your letter No. 113, dated the 22nd instant, I

have the honour to submit the following report on the cultivation of, and trade in, wheat in this division.

2. This report contains information with regard to four only out of the five districts in this division. I will, however, submit a supplementary report on receipt of the report from the Collector of Moorshedabad.

3. There is no cultivation of, or trade in, wheat in Khoolna. The report for that district is therefore blank.

Wheat trade, 24-Pergunnahs.

4. The cultivation of, and trade in, wheat in the 24-Pergunnahs is very limited. Only a small area in the northern part of it, near Goberdanga, thana Habra, is under wheat cultivation, and the yield is of a coarse sort, generally called red wheat. The whole of the outturn is exported to Dum-Dum for the consumption of the troops there. The opening out of the Bengal Central Railway has given ample facilities for the transit of the wheat to Dum-Dum, and no special provision seems to be necessary for its storage after it has been brought to the railway station. At present the wheat is bagged and brought to the railway wagons on carts and taken down to Dum-Dum. The wheat thus brought to Dum-Dum contains an admixture of indigenous matters, but here it is cleaned, winnowed according to the native system, ground by small millstones, and reduced to flour. The Collector thinks that some improvement in the processes of grinding and winnowing the wheat is feasible if portable thrashing-machines could be invented for the purposes; but considering the small area under wheat cultivation, Mr. Paul is not sanguine that the cultivation will improve, or that the trade in wheat in his district will develop.

* * * * *

Wheat trade, Nuddea.

7. In Nuddea a large quantity of wheat is grown in the sudder subdivision, about a hundred thousand maunds being annually exported to Calcutta by river. The sub-divisional officers of Meherpore, Kushtea, and Chuadanga report that only small quantities of wheat are grown in those parts, and that nearly the whole of the produce is wanted for local consumption. The cultivation of wheat in the Ranaghat sub-division appears to be somewhat larger, and there is some exportation of the grain to Calcutta from that sub-division.

8. The local mahajans cannot say how much of the wheat which they send to Calcutta is consumed in the country, and what quantity, if any, finds its way to the English market. The latter alone, of course, would come under the purview of the resolution of the Punjab Government.

* * * * * *

11. The average outturn per bigha is 8 maunds, and the price varies according to quality from ₹2-4 to ₹2-8 a maund. Mr. Hopkins observes that there does not seem to be much ground for Government interference for providing a cleaner grain for exportation. As a rule, the seeds of the different varieties of wheat are sown separately, and whatever may be the case in the Punjab or elsewhere, neither the actual cultivators nor the middlemen in Nuddea appear to be in the habit of *intentionally* mixing the wheat with other seeds or with dirt. Considering, however, that the thrashing is done by making cattle tread on the grain on a mud floor, and that the winnowing is effected by merely

exposing it to the action of the wind, there cannot but be some impurities. But, as remarked by the Director of Agriculture, North-Western Provinces and Oudh, even with these rude and simple means "the cultivator can, and often does, clean down to 2 per cent. of impurities, but the consignees insist on deducting 4 per cent. on this account from the purest samples they receive, thereby occasionally making a not wholly deserved profit."

12. None of the mahajans or middlemen of Krishnaghur who send wheat to Calcutta seem to have direct dealings with the merchant shippers to England. They state that they have not been hitherto called upon by the mahajans of Calcutta, with whom they have dealings, to supply a cleaner grain; and if there is such a demand, the supply would, no doubt, be forthcoming.

13. The suggestions made by Messrs. Reinhold Brothers of Cawnpore to have a cleaning shed at that station, where certificates regarding quality would be granted by a Committee comprised of a railway officer and an officer of Government from the Agricultural Department, could, Mr. Hopkins observes, be hardly meant to apply to any of the railway stations or other central depôts in his district. The importation of wheat from Kushtea, Chuadanga, or Ranaghat is small, and there is at present no railway to Krishnaghur.

14. Generally speaking, Mr. Hopkins concurs with the Director of Agriculture, North-Western Provinces, in thinking that, should it really be anywhere necessary to take steps for obtaining a cleaner grain, it is "precisely the kind of thing which ought to be done by private agency, and Government should not interfere unless the Chamber of Commerce find that they are unable to insist on proper arrangement being made."

Jessore wheat trade.

15. The Collector of Jessore states that his district cannot be regarded as a wheat-producing district in any sense of the term. * * * So far as Jessore is concerned, the question of the advisability of erecting warehouses for cleansing the grain from impurities need not be discussed. It may be mentioned here that some time ago, in accordance with a suggestion from the Government of Bengal, the sub-divisional officers in this district were instructed by the Collector to impress on the cultivators the importance of preventing the admixture of any foreign substance with wheat in order that they might realise the proper value for their produce.

22

From Covenanted Deputy Collector in charge Moorshedabad, to Commissioner, Presidency Division, No. 2310G., dated 30th January 1886.

Moorshedabad.

I have the honour to submit the following report regarding the cultivation of, and trade in, wheat in this district, called for in your No. 13M.A. of the 10th August 1885.

2. A statement showing, thana by thana, the area under this crop, and the total outturn, is annexed.* The quantities are fairly large, but there are no data for ascertaining how much of the produce is consumed

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* NOTE.—The statement, which is not reproduced, shows the total acreage for the district as 236,183, and the estimated outturn as 923,223 maunds.

at home, and how much is exported elsewhere. The latter quantity, however, cannot be so large as to require special regulations, nor can the trade be so extensive as to render warehouses of the kind suggested necessary.

3. Three varieties of the grain are grown in this district, *viz.*, *gungajali*, *jamali* and *khore*. They are named in order of quality.

Causes of impurity of wheat.

4. Wheat is grown on *mutter* land and is cleaned by winnowing. It is sown in October and November and reaped in March and April. It is quite free from impurities when brought from the cultivators by the traders, but the latter are in the habit of adding to it an admixture of other matter in order to increase the weight. If people would take none but clean wheat, this practice of adulteration might cease; but this cannot be hoped for so long as purchasers continue to look more to the cheapness than to the purity of the grain they buy.

23

From Bengal Chamber of Commerce, to Government, Bengal, dated 13th November 1885.

I am desired by the Committee of the Bengal Chamber of Commerce to acknowledge receipt of your letter, dated 25th July, with its accompanying papers, on the subject of the wheat trade of the Punjab, with regard to which you request an expression of opinion on the bearing of these papers on the wheat trade in Bengal, with such practical suggestions as the Committee may wish to offer.

2. In reply, I beg to say that the attention of the Chamber has, as requested, been particularly given to paragraphs 7 and 8 of the Resolution of the Punjab Government, which deal with the action of small middlemen in the matter of adulteration, and discuss the question of establishing cleaning depôts at selected stations. The Committee are now enabled not only to express their own views on these points, but also those of the Committee of the Wheat and Seed Trade Association, to whom the papers have been referred for opinion.

Cultivators should be advised not to sow mixed wheat.

3. As regards paragraph 7 of the above Resolution, it is the opinion of the Chamber that Government officers should be instructed to continue to impress upon the cultivators and middlemen the importance of keeping their wheat as clean as possible, and of sowing, as far as practicable, different descriptions of produce in separate fields. It might also be explained to them that No. 1 club wheat, or the Delhi and Buxar varieties of soft white grain, and No. 2 club, consisting of Cawnpore-Lucknow grain, command a higher price than other descriptions, and efforts might be made to introduce these varieties into districts where only the inferior qualities of grain, difficult of sale for export, have hitherto been cultivated.

No remedy against wilful adulteration.

4. The mixing of dirt or inferior grains by mofussil dealers is a matter against which the Chamber is unable to suggest any remedy; but, no doubt, when these dealers realise the loss sustained by the reduction of weight paid for due to express refraction, they will see their advantage in sending to the market wheat fit for immediate export, thus saving additional charges at the port of shipment.

5. With reference to paragraph 8 of the Resolution of the Punjab Government, it is the opinion of the Chamber that much good would possibly be done in the direction of the development of the wheat trade by improving communications between the districts of growth and the different railway stations by means of cart-road feeders. It is considered that central cleaning depôts are neither necessary, advisable, nor practicable, as the expense that would be incurred in using them for cleaning an article of such low primary value as wheat would increase the cost out of proportion to the improved price which might be obtainable for the cleaned grain in the home markets.

Extension of cart-roads advocated. Cleaning depôts unnecessary.

24

From Director, Department of Land Records and Agriculture, Bengal, to Government, Bengal, No. 692, dated 27th July 1886.

In continuation of my letter No. 391T., dated the 7th instant, submitting a report on the subject of the cultivation of, and trade in, wheat, I have the honour to forward, for the information of Government, a copy of the correspondence with the Bengal Chamber of Commerce, on the question of the reduction of the percentage of refraction allowed by the trade in wheat.

From Director, Department of Land Records and Agriculture, Bengal, to Secretary, Bengal Chamber of Commerce, No. 134, dated Calcutta, the 16th April 1886.

I send herewith a rough draft of portion of a letter on the subject of wheat, about which I sent you a letter on a former occasion. You will see that the opinion strongly held by Mr. Allen and others who have made special enquiries on the subject is that the only remedy for the admixture of dirt with Indian wheat is one which lies in the hands of the merchants themselves. If this be so, I should be glad to be able to add that the Chamber will take the subject into consideration with a view to apply the remedy suggested. If, on the other hand, the opinion expressed is incorrect, I should be obliged for any correction which your Committee may suggest before officially expressing the view suggested in the draft. * *

Interference of Chamber of Commerce suggested.

From Secretary, Bengal Chamber of Commerce, to Director, Department of Land Records and Agriculture, Bengal, dated the 11th June 1886.

My Committee have consulted with those most directly interested on the export trade of this city as to the reduction of the percentage of the fraction allowed in wheat. It would be an advantage to have wheat as pure as possible, and to impress upon cultivators the desirability of their sending their grain to market with the least possible admixture of foreign substances; but in the present circumstances of the trade, my Committee do not feel themselves in a position to recommend an alteration in the standard of refraction for wheat.

Alteration of refraction impossible at present.

From Director, Department of Land Records and Agriculture, Bengal, to Secretary to the Bengal Chamber of Commerce, dated Darjeeling, the 14th June 1886.

Then Government cannot intervene to secure pure wheat.

In your letter of the 3rd May, it was stated that the Committee of the Wheat and Trade Association agreed with the tenor of my draft letter, and were prepared to consider the suggestion to reduce the rate for refraction. In your present letter you do not say whether the Committee still agree with the tenor of the draft, but you say the Chamber think that it would be an advantage to impress on the cultivators the desirability of producing grain with the least possible admixture of foreign matter. If the facts and arguments mentioned in my letter are correct, the inference from them would appear to me to be that Government officers, so far from impressing on cultivators the desirability of producing clean grain, should, on the contrary, point out to them the fact that they will derive no benefit from producing entirely clean grain, but that it is to their interest to mix at least five per cent. of dirt. I should be much obliged if you would kindly let me know whether there is any fallacy in this view of the case, and if not, perhaps you may induce the Committee to re-consider their decision.

Telegram from Secretary, Bengal Chamber of Commerce, to Director, Department of Land Records and Agriculture, Bengal, dated the 1st July 1886.

Decision that of Trade. Chamber cannot alter custom

25

Government, Bengal, to Director, Department of Land Records and Agriculture, No. 1899—304, dated 10th August 1886.

I am directed to express the thanks of the Lieutenant-Governor for the careful report on the cultivation of wheat in these provinces contained in your letter No. 391T., dated 7th July 1886.

Cleaning ware-Chamber's inaction regretted.

The Lieutenant-Governor regrets to observe from the correspondence subsequently forwarded under cover of your letter No. 692, dated 27th July 1886, that the Chamber of Commerce has declined to re-open the question of an alteration in the standard of refraction for wheat. Sir Rivers Thompson trusts, however, that if the prospects of the trade improve, it may be possible for the Chamber to take action in this important matter, and in this hope has again addressed that body on the subject.

Warehouses to be left to private agency.

2. The establishment of warehouses for cleaning and grading grain is a matter which should be left to private agency, and the Lieutenant-Governor concurs in the opinion expressed by you and the majority of the officers consulted on the subject that Government interference in this respect is clearly undesirable.

26

From Government, Bengal, to Chamber of Commerce, No. 1896—301, dated 10th August 1886.

I am directed to forward for information copy of a letter No. 391T.

dated 7th July 1886, and enclosures, from the Director of the Agricultural Department, Bengal, reporting on the wheat cultivation and trade in Bengal, and to invite the attention of the Chamber of Commerce to the remarks made therein regarding the present deduction of 5 per cent. made for impurities in wheat, irrespective of the cleanness or otherwise of the samples. The matter is one of great importance to all engaged either in the cultivation of wheat or in the wheat trade; and although the Lieutenant-Governor understands that the present time is unpropitious for any action in the direction indicated by the Director of Agriculture, he trusts that the Chamber of Commerce will be able at no distant date to bring about so desirable a reform.

Further reference to Chamber of Commerce.

27

From Chamber of Commerce, to Government, Bengal, dated 15th September 1886.

The Committee of the Chamber of Commerce instruct me to acknowledge your No. 1896—301-Agri., dated 10th August, in which the attention of the Chamber is invited to the present deduction of 5 per cent. made for impurities in wheat, irrespective of the cleanness or otherwise of the sample, and in which a hope is expressed that the Chamber of Commerce may be able at no distant date to bring about a reform which His Honour the Lieutenant-Governor agrees with the Director of Agriculture in considering desirable.

In reply, I am to say that in again discussing the question of the refraction of wheat the Committee of the Chamber have availed themselves of the views and opinions of the Calcutta Wheat and Seed Trade Association. The Chamber of Commerce is quite as desirous as the Government to secure that Indian wheat shall be exported as free from admixture as possible, and keeps this result steadily in mind in all discussions bearing on this subject. But although parcels of fairly clean wheat do reach Calcutta, they are so small as to have no effect on the market. An exporting merchant is precluded from giving a better price for such parcels, because he will reap no corresponding advantage in the home market. If clean wheat were delivered in Calcutta in large quantities, the case would be different.

Reasons why refraction cannot be altered.

The Director of Agriculture remarks that, "a minimum of 5 per cent. refraction is deducted by exporters in Calcutta;" this is a misapprehension. No deduction of weight is made unless the impurities in a parcel exceed 5 per cent. It is because experience shows that wheat can seldom be delivered in Calcutta with a less amount of admixture than 5 per cent., that the Committee do not see their way to recommend an alteration of the standard of refraction. The officers of Government may render the trade most valuable service by steadily impressing upon the cultivators that, what is most objectionable in Indian wheat in the eyes of home buyers, is the presence in a parcel of other grains and seeds, such as barley, pulses, linseed and the like. Mud and earthy matter can be eliminated without very great difficulty, but it is next to impossible to separate other grains and seeds from the wheat. So long as Indian

The system explained.

cultivators grow wheat crops carelessly, or along with, or side by side with, other grain or seed crops, so long will it be difficult to obtain wheat in quantity of a purity which would enable exporters to alter the standard of refraction. But real service would be done both to the trade and the cultivators if the officers of Government kept steadily before growers of wheat that it is principally the admixture of foreign grains and seeds which maintains the 5 per cent. standard of refraction, and also impressed upon them that to obtain a better price for clean wheat, such wheat must be sent into this market in large quantities.

Condition of railway storage accommodation.

Connected with the question of the condition in which wheat reaches this market, is the very important question of the accommodation for it provided at up-country stations, especially on railways other than the East Indian line. It is hopeless to expect to improve the hold of Indian wheat on the European market so long as there is nothing at certain times to prevent its reaching Calcutta weather-damaged. The absence of proper and sufficient accommodation at railway stations for receiving wheat has mulcted shippers in very heavy allowances, and is one of the main causes of bringing Indian wheat into disfavour with home consumers. The wheat season extends from April to October, and as soon as the rains set in the lack of proper accommodation results in a portion of nearly every parcel arriving damaged. Not only is the shelter insufficient, but in many cases the railway platforms are not raised to the point of safety from casual inundations. The railways endeavour to protect themselves by granting to a consignor clear railway receipts against his indemnity note. This practice, when regard is had to the short time allowed at Howrah for the examination of wheat by consignees, and also to the limited facilities they enjoy for such an examination, results in large quantities of damaged goods passing undetected to the manifest and serious loss of shippers.

Reform in railway storage much needed.

The Committee of the Chamber of Commerce would in the best interest of the wheat trade bring this question of the accommodation at up-country stations very strongly to the attention of His Honour the Lieutenant-Governor.

28

From Director, Department of Land Records and Agriculture, Bengal, to Government, Bengal, No. 1265, dated 18th August 1887.

I have the honour to acknowledge the receipt of your memorandum No. 1258 T.—R., dated 29th of September last, forwarding, for any remarks I may wish to make, a letter from the Secretary to the Chamber of Commerce, dated 15th idem, in which comment is made on certain remarks made by me on the subject of wheat refraction, in a report submitted with my letter No. 391 T., dated 7th July 1886.

2. The remarks made as regards refraction in that report were the following :—

Real cause of impurity the refraction system.

"The real reason why Indian wheat is adulterated by admixture of foreign substances lies, not in defectiveness of winnowing arrangements, but in the fact that it is not to the cultivator's interest to produce entirely clean grain; for so long as a minimum of 5 per cent. refraction is deducted by exporters in Calcutta, it is evident

that it is the interest of the producer to mix dirt with the grain to that extent at least. It was suggested that the remedy therefore lies not in the introduction of better winnowing arrangements so much as in the alteration of the present system of deductions for refraction.

Mr. Allen confirms these views by saying: 'Similar arguments apply to adulteration of mud, &c. These, I believe, the ryot does not add wilfully, because the bepari or petty trader to whom he sells would detect them in his small consignment and pay him an inferior price. On the other hand, the petty trader does not insist on cleaned grain, for he will not himself sell grain containing less than 5 per cent. of impurities, which, if deficient, he will add; for so long as the Calcutta merchants accept 5 per cent. as refraction, it would not pay the bepari to sell grain with only one or two per cent. of adulteration. This brings me to the real point of the whole question. It is purely a case of supply and demand. If the Calcutta merchants insisted on cleaned grain, they would get it. They do insist on clean samples in the case of linseed, and the result is that linseed is cleaned by the actual cultivators before being sold to the petty dealers. The same result would, I believe, follow in the case of wheat. As matters now stand, wheat in Patna is freely adulterated. Ralli Brothers in Patna City deal only with the petty dealers, and these refuse to give any guarantee with the wheat sold. Each lot has to be tested both for impurities and for the percentage of red grain before the price is fixed. If the samples tested happen to be superior to the bulk, the bepari gains. If they should be inferior, the bepari can refuse to deal, and so he cannot lose either way. The cultivators never get a fair price, for the brokers and the aratdars have each to get their commissions on each transaction between the bepari and Ralli Brothers. In some marts, where the grain comes chiefly from the neighbourhood, it might be possible for Ralli Brothers to deal directly with the actual cultivators; but in Patna, where the grain comes largely from Gorakhpore and Fyzabad, this is impossible, and the agent for Ralli Brothers is compelled to deal with the petty dealers whose interest it is to cheat him if they possibly can.

'Since writing the above, I have had a remarkable confirmation of these views from the Manager of the Dumraon Raj, the Hon'ble Jai Prokash Lall. The statements he made were so significant that I took a note of them at the time, and at the same time informed him that I should embody them in this report. The Manager said that, about two years ago, when the prospects of the wheat trade were apparently good, he seriously thought of cultivating wheat on a large scale. He estimated that on the Rajah's estates there were 300,000 acres of land capable of growing wheat, and he proposed commencing operations with a capital of two lakhs. His idea was to induce the ryots to grow wheat alone by means of advances in coin and seed, and he intended purchasing machinery, such as he had seen at the Calcutta Exhibition, for cleaning the grain. All that he now required was a remunerative market. Last year, when in Calcutta on Council business, he called at the office of Ralli Brothers, and after telling them his plans asked what price they would give for clean grain. *Ralli Brothers informed him that owing to the action of the merchants in England they could not afford to pay more for a clean sample than they now did for grain with 5 per cent. refraction. Upon hearing this the manager abandoned the idea of growing and cleaning wheat on a large scale.* It is difficult to over-rate the significance of this anecdote, which appears to prove conclusively that so long as merchants will not pay a higher price for clean grain, it is useless for Government to think of inducing cultivators to change their present practice.

Better prices denied for clean wheat.

'I then asked the Manager about wilful adulteration. He said that he had a gola at Itarsi, near Buxar, from which he used to sell wheat on rather a large scale to the agent of Ralli Brothers at Buxar. The wheat as he got it did not contain 5 per cent. of foreign matter. Accordingly his servants were directed to mix two maunds of earth with every 100 maunds of grain, so as to bring the adulteration up to the required standard. This earth was treated with water and specially prepared for the purposes of adulteration. The suggestion for adulterating the grain in this way came, as the Manager says, from the employés of Ralli Brothers. This fully bears out what Major Boileau says, that grain-dealers in Dinapore wilfully adulterate their grain, adding about two maunds and thirty seers of dry clay, bhusee, and other grains to every hundred maunds of wheat. Mr. T. Gibbon, C.I.E., the Manager of the Bettiah Raj, told me that wilful adulteration was practised by the petty dealers in Chumparun, and Mr. Carnduff, writing from Hajipore, a large grain mart, says:—'In the hands of the middlemen, when the grain is lodged in their golas, such grains as *akla pipra* are, I understand, intentionally added with a view to adulteration.' Mr. Jenkins from

Wilful adulteration; why practised.

Buxar, who has clearly paid a good deal of attention to the subject, is of the same opinion.

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'Messrs. Mylne and Thompson have pointed out to me that the adulteration of *gúr* is analogous to the adulteration of wheat. When their sugar-mills were first introduced, they were valued by the purchasers on account of their saving labour and not because they turned out a cleaner article. Even now the Bunniahs in Jagdispore refuse to pay a higher price for *gúr* free from adulteration, and though the cultivators *can* produce clean *gúr*, and *will* do so if required, it does not pay them to clean the *gúr* they sell in open market. There is now, however, a tendency among European firms to pay a higher price for purer *gúr*; similarly, if the merchants would reduce their standard of refraction, they would get cleaner samples of wheat. This question is treated exhaustively in the report from Shahabad, and it is so difficult to make extracts without omitting something of interest, that I venture to suggest that the whole report be sent in original. The possibility of cleaning grain with the ordinary tray-shaped fan (soop) is pointed out by the Collector of Sarun and in the report from the Patna district.'

"As regards, then," I added, "the alleged imperfection of present arrangements for winnowing, it will thus be seen that the mixture of dust from the threshing-floor forms a very small portion of the impurities found in Indian grain, and that the present arrangements for winnowing are as good as can be hoped for under present conditions. It will of course be desirable to effect improvements in winnowing and threshing, should any be found possible; but the root of the evil complained of can only be reached by the abolition of the system of allowing a minimum refraction of 5 per cent.—a remedy which lies in the hands of the merchants themselves. The facts mentioned by the Manager of the Dumraon Raj show conclusively that clean grain will be forthcoming if the merchants pay for it, and that it will not be forthcoming, however perfect the winnowing and threshing arrangements may be, so long as a minimun of 5 per cent. is allowed for impurities, be the samples ever so clean.

"These facts and arguments have been brought to the notice of the Calcutta Chamber of Commerce, who, while not denying their force, express regret that they are unable in the present state of the trade to alter the existing practice in this respect. As long as that practice continues, it would appear to me to be futile for Government officers to talk to cultivators of the advantages of producing entirely clean grain. On the contrary, if Government officials interfere at all in the matter, it should be by explaining to the cultivators that it is to their interest to mix at least 5 per cent. of foreign matter with clean grain before offering it for sale."

3. The Chamber, in reply to the remarks above quoted, observed that—

"In again discussing the question of the refraction of wheat, the Committee of the Chamber have availed themselves of the views and opinions of the Wheat and Seed Trade Association. The Chamber of Commerce is quite as desirous as the Government to secure that Indian wheat shall be exported as free from admixture as possible, and keeps this result steadily in mind in all discussions bearing on this subject. But although parcels of fairly clean wheat do reach Calcutta, they are so small as to have no effect on the market. An exporting merchant is precluded from giving a better price for such parcels, because he will reap no corresponding advantage in the home market. If clean wheat were delivered in Calcutta in large quantities, the case would be different."

Calcutta Chamber's explanation of refraction system.

"The Director of Agriculture remarks that 'a minimum of 5 per cent. refraction is deducted by exporters in Calcutta;' this is a misapprehension. No deduction of weight is made unless the impurities in a parcel exceed 5 per cent. It is because experience shows that wheat can seldom be delivered in Calcutta with a less amount of admixture than 5 per cent. that the Committee do not see their way to recommend an alteration of the standard of refraction. The officers of Government may render the trade most valuable service by steadily impressing upon the cultivators that what is most objectionable in Indian wheat in the eyes of home buyers is the presence in a parcel of other grains and seeds, such as barley, pulses, linseed, and the like. Mud and earthy matter can be eliminated without very great difficulty, but it is next to impossible to separate other grains and seeds from the wheat. So long as Indian cultivators grow wheat crops carelessly or along with, or side by side with, other grain

or seed crops, so long will it be difficult to obtain wheat in quantity of a purity which would enable exporters to alter the standard of refraction. But real service would be done both to the trade and the cultivators if the officers of Government kept steadily before growers of wheat that it is principally the admixture of foreign grains and seeds which maintains the 5 per cent. standard of refraction, and also impressed upon them that to obtain a better price for clean wheat, such wheat must be sent into this market in large quantities."

4. I have hitherto refrained from making any comment on the Chamber's remarks, because it appeared to me that the object which the Chamber and Government alike had in view, namely, that of promoting the interest of producers and traders in Indian wheat, by the adoption of measures for prevention of adulteration of wheat by admixture of foreign substances with it, would not be served by entering on a discussion which could lead to no substantial results. It was therefore thought desirable to endeavour to take some such action as would bring the questions at issue to a practical test, and it is rather with a view to report the results of this action, than from a desire to criticise the letter of the Chamber of Commerce, that I now address you.

5. One or two remarks may, however, in passing, be here made on the Chamber's letter.

Practical effect of the system.

It may at once be admitted that the phrase "a minimum of 5 per cent. refraction is deducted by exporters in Calcutta" is misleading. Five per cent. is not deducted from the actual weight of wheat when it arrives in Calcutta, but prices are fixed on the assumption that all wheat contains at least 5 per cent. of foreign matter; and given say 100 maunds of best Buxar wheat landed in Calcutta free from dirt, my contention was that the price per maund which such wheat would realize was not more than that same grain would fetch if mixed with 5 per cent. of dirt. I do not understand, from the discussions which have taken place on the subject, that the correctness of this statement is disputed, and if this be so, it would appear that the practical effect of the system as regards encouragement of adulteration is the same as if 5 per cent. were deducted from every 100 maunds of clean grain. I admit, however, as already remarked, that the phrase used was somewhat misleading; but I may perhaps be allowed to plead in excuse for it that the report in which it occurred was laid before the Chamber before it was published, that criticisms were invited upon it, and that attention was specially called to the remarks on the subject of refraction, but no exception was taken to them: on the contrary, the accuracy both of the statements of facts and of the conclusions deduced from them would appear, from the correspondence which took place, to have been admitted.

Efforts to get better price for clean wheat.

6. Coming to the real subject-matter of this letter, I now beg to report what measures have been taken to bring the question at issue to a practical test, and the degree of success which has attended those efforts. It will be remembered that the Hon'ble Jai Prokash Lal, Manager of the estates of the Maharajah of Dumraon, had stated that he had at one time formed a plan to induce his ryots to grow wheat, on a large scale, alone, without admixture of other crops, but that he abandoned the idea because he found that he could not obtain a higher price for clean wheat than for the same grain mixed with 5 per cent. of dirt or other foreign substance. This gentleman came down to Calcutta in

March last, and expressed his willingness to reconsider his decision. Accordingly I addressed certain Calcutta firms named in the margin, and enquired whether they would guarantee a higher price for clean wheat than for the same quality of grain mixed with 5 per cent of dirt. It will be seen, from the correspondence which is annexed, that none of these firms were at that time in a position to offer higher prices for clean grain than for the same grain mixed with 5 per cent. of dirt; but they expressed their willingness to send samples of pure wheat to England, if supplied with it by the Manager of the Dumraon Raj or Government, with a view to ascertain whether it would there fetch an adequate price.

Messrs. W. Vale King & Co.
„ Petrocochino Brothers.
„ Ralli Brothers.

Experiment with steam thresher.

Messrs. Marshall, Sons & Co., Gainsborough, England, about this time proposed to bring one of their steam wheat-threshing machines from Bombay, and by means of it to clean wheat down to 2 per cent. of impurities, and also to purchase some wheat thus threshed and cleaned, and send a small consignment of 200 to 300 tons of it to England, in order to ascertain whether it would command a higher price than ordinary Indian wheat mixed with dirt. They asked Government to co-operate by making a grant of ₹1,000 towards defraying the charges of carriage of the machine This grant was made, and the machine was accordingly brought from Bombay and tried at Dumraon in May last.

7. It was found that the machine failed to separate wheat from *bhut* or gram, and it was then too late to obtain a sufficiently large quantity of wheat which had been grown alone to permit of the original plan of sending two or three hundred tons to England being carried out. Experiments were, however, made on a limited scale, and samples of the steam-threshed grain were sent to the Chamber of Commerce, to the Agri-Horticultural Society, and Messrs. Ralli Brothers for appraisement.

Valuation of results.

The reports of the Chamber of Commerce and of Messrs. Ralli Brothers are annexed. According to the report of the latter, the grain threshed in the ordinary way contained 5⅛ per cent. of impurities; the steam-threshed wheat contained only 1⅛. But the steam-threshed wheat, on the other hand, was to some extent chipped and broken. Messrs. Ralli Brothers point out that it is impossible to fix the relative values of the two samples, and add that if the steam-threshed sample were delivered against a contract, allowing 5 per cent. refraction, the seller would derive no advantage from the superior purity of the sample. The Committee of the Wheat and Seed Trade Association say that the bullock-threshed grain contained 9 per cent. of foreign matter, and was practically unmerchantable, while the steam-threshed wheat refracted only 3¾ per cent. The value of 100 maunds of the former they put down at ₹279, and of the latter at ₹290-10.

8. It will thus be seen that these experiments, though they show that wheat can be cleaned down to 2 or 3 per cent. of refraction, yet are not decisive on the question whether wheat so cleaned will command an adequate price.

9. It will, however, be satisfactory to Government and to the public to learn that Messrs. Ralli Brothers have, as will be seen from their letter dated 21st July 1887 (reproduced as an annexure to this letter) lately shipped to Marseilles two samples to be there sold on their merits

one with 6 per cent. refraction, the other cleaned down to 3 per cent. The former cost R2-14-4 per maund, the latter R2-15-11, including cost of cleaning at three pies per maund; and it remains to be seen whether the latter will command such a price as would make the repetition of the experiment on a large scale profitable. I entirely agree with Messrs. Ralli Brothers "that improvement in the condition, or rather impurities which are contained in Indian wheat, will result in accordance with the requirements of the consuming countries; if they wish to receive cleaner wheat and pay for it accordingly, cleaner wheat will be exported, because exporters will adapt themselves to the requirements of consumers." But I differ from them when they say "at the same time this result will also be obtained by the endeavours of the Agricultural Department in the way of impressing on cultivators the necessity of supplying wheat as free of the admixture of other grains as they possibly can." I think there is a tendency to attach too much importance to the influence of Government officers in such matters—at least in Bengal. Ryots, if urged by Government officers to do anything which it is their interest or inclination to do, are only too willing to accept such advice and to shield themselves behind it; but when there is a question of doing something which it is not their interest nor their inclination to do—for instance, payment of public cesses—the advice of Government officers goes for little, and their interference in matters which do not fall within their province, when not necessary, does more harm than good. Concerning the question under discussion, I have heard of a case in point in which ryots having been urged by their Sub-divisional Magistrate to sow wheat without mixture of other grains, showed their appreciation of his interference by dropping the cultivation of it altogether.

Messrs. Ralli Bro. views.

Government influence exaggerated.

10. It appears to me that it is as unreasonable to dictate to the growers of wheat in this matter, as it would be to dictate to the shippers in Calcutta what their pecuniary interests may be, or to expect them to act in a manner opposed to those interests. But it is also as futile to blame the producers for growing other crops with wheat if they find it profitable to do so, as it is to impute blame to merchants in Calcutta for purchasing and shipping wheat mixed with dirt so long as there is a demand for dirty wheat in Europe, and adequate profit cannot be obtained by shipping clean grain. The experiment now being made by Messrs. Ralli Brothers will tend to show whether such profit can be obtained. If it should turn out that a remunerative price can be got for clean grain, then there can be little doubt that Messrs. Ralli Brothers would ship clean wheat, that the example set by them would be followed by others, and that the refraction would thus be soon reduced. If, on the other hand, it is found that consumers in Europe prefer dirty wheat,

Government cannot dictate to growers.

Clean wheat will follow on better prices.

"The report is in answer to a Government circular in which, amongst other things, attention was directed to the necessity of obtaining clean grain for export. It appears that at present the grain is mixed with dirt, &c., and it has also been ascertained that this is a fault that could be rectified were it not for a peculiar trade custom. The Calcutta merchants (who in their turn declare that they act under the compulsion of the merchants in England) insist, when buying wheat, upon making a 5 per cent. deduction for impurities, no matter how clean the samples may be. Consequently, the intermediary who sells takes good care that this percentage of impurity is attained, and if it should be the case that the grain he has to dispose of comes to him clean from the cultivator, he at once sets about to adulterate it by mixing two maunds of earth with every 100 maunds of grain. Although this result of their rule has been pointed

out to them, the Calcutta merchants have the boldness to ask that the Government should come to their assistance. Speaking for themselves and for the Committee of the Wheat and Seed Trade Association, the Bengal Chamber of Commerce ask that 'Government officers should be instructed to impress upon the cultivators and middlemen the importance of keeping their wheat as clean as possible.'

"And no doubt it would be very pleasant for the members of those Associations and for merchants here as well, if they were enabled to get their full 100 per cent. of clean wheat while paying only for 95 per cent. of wheat and 5 per cent. of dirt. The cultivator or native dealer, however, naturally takes a different view of the transactions. If you want wheat, he says, you must pay for it, and if you only pay for dirt, then dirt you will have. This is only reasonable, and Mr. Finucane is quite right when he expresses the opinion that so long as the rule of the merchants remains as at present, 'if Government officials interfere at all in the matter, it should be by explaining to the cultivators that it is in their interest to mix at least 5 per cent. of foreign matter with clean grain before offering it for sale.' It is a pity, however, that the Indian wheat trade should be hampered by such absurd rules, and it is desirable that it should be clearly understood here where responsibility in the matter mainly rests."—*Economist* of 16th October 1886.

and will not pay for a clean article, then, as the *Economist* pointed out in a note in its issue dated 16th October 1886, from which an extract is quoted in the margin, the fault (if fault it be) will have been brought home to the right parties, and if remonstrance is to be addressed or pressure is to be brought to bear by Government on any of the parties concerned, such remonstrance would have to be addressed by Her Majesty's Secretary of State to merchants in Europe. It must, however, be remembered that it was not Government or any of its officers who first moved in this matter, but that it was the Bengal * Chamber which drew attention to the evil complained of and requested Government to take action, and that all Government has done in reply is to point out that the action suggested is not legitimate, and that the remedy for the evil lies in the hands of the merchants either here or at home, or in the hands of the consumers in Europe. In this connection I would take this opportunity to remark that when in a former report it was said by Mr. Allen that the employés of Messrs. Ralli Brothers had told the Manager of the Dumraon Raj to mix two maunds of dirt with every 100 maunds of wheat, it was not meant to imply that Messrs. Ralli themselves, or any of their European assistants, recommended anything of the kind, though some of their subordinates certainly did so. So far from imputing any objectionable practices to Messrs. Ralli or their principal assistants, I have to acknowledge my thanks to them, as well as to the Chamber of Commerce, for the valuable advice and information in my enquiries on this question. With regard to the experiment in shipping clean samples, now being made by Messrs. Ralli Brothers, it may be here observed that as nineteen-twentieths of the wheat shipped is sold before it is bought by Calcutta shippers, the result of the sale of a small parcel of clean wheat *after arrival in Europe* must not be too readily expected to upset the conditions under which the trade has hitherto been worked. As all shipments of Indian wheat are now either approved or disapproved by home buyers after comparison with a standard sample of average shipments made up monthly by the London Corn Trade Association, the sales of clean wheat must either be made on small samples sent home from here—or wheat, like seeds, must be analysed at home. In either case

Remedy lies with exporters and European consumers.

* *Vide* their letter dated the 24th July 1883, to the address of the Government of India, Revenue and Agricultural Department.

Obstacle imposed by system of forward contracts.

it will be slow and difficult work to introduce a marked and sudden innovation into a well-established trade.

Comparison between steam and bullock threshing.

11. With a view to test the relative merits of steam-threshing and threshing by having grain trodden out by bullocks in the ordinary native fashion, one ton of wheat was carefully weighed and passed through the steam-threshing machine at Dumraon. It took 40 minutes to pass through, but the engine was not working with full power. Mr. Scott, the mechanic in charge, was of opinion that with full power the work would have been finished in half an hour. Besides Mr. Scott a native mechanic and six coolies were employed in working the steam thresher.

When threshed the crop was weighed and the results were—

	Cwt.	qrs.	lbs.
Of clean grain	8	3	3
Of cattle food	0	1	13
Of straw	5	3	14
Of chaff	4	3	20
	19	3	22

12. One ton of the same wheat was next threshed in the native system. With 10 bullocks this work took eight hours to complete. Four coolies were employed in threshing for eight hours and the same number in winnowing for four hours.

The cost of threshing in this case came to R1-11, thus—

	R	*a.*	*p.*
Hire of 10 bullocks, at 1½ anna each	0	15	0
Wages of 4 coolies for 8 hours	0	8	0
„ 4 „ 4 „	0	4	0
	1	11	0

or, say, two annas per maund of threshed grain.

When threshed the weight of grain and straw was as follows:—

	Cwt.	qrs.	lbs.
Grain	9	2	15
Straw	9	3	0
	19	1	15

Taking the value of the steam-threshed grain, as estimated by the Chamber of Commerce, at R290-10 per 100 maunds, and the bullock-threshed grain at R279 per 100 maunds, the financial results stand thus—

	R	*a.*	*p.*
100 tons of unthreshed corn if threshed by steam-machine will yield—			
1,200 maunds of grain with 3¾ per cent. refraction, valued at R290-10-0 per 100 maunds by Chamber of Commerce (omitting fractions)	3,487	0	0
100 tons of unthreshed corn if threshed by bullocks will yield—			
1,316 maunds of grain with 9 per cent. refraction, valued at R279 per 100 maunds	3,671	0	0
Difference in favour of bullock-threshing and dirt per 100 tons of unthreshed corn	184	0	0

Against this balance in favour of bullock-threshing must, however, be set off—

	R
(*a*) Cost of carriage of 116 maunds of extra dirt from Dumraon to Calcutta, at R39 per 100 maunds	45
(*b*) Extra cost of bullock-threshing as compared with steam-threshing, at one anna per maund, on 1,316 maunds .	82
	127

The difference in favour of bullock-threshing is R57.

Advantage in favour of bullock threshing.

It thus appears that even after making all reasonable deductions for carriage of dirt and for saving of labour by steam-threshing, the balance of advantage to the ryot, according to the figures furnished by the Chamber of Commerce, would still be on the side of bullock-threshing and admixture of dirt. I have taken the cost of steam-threshing at one anna per maund, as estimated in Bombay; but as labour is cheaper in Behar, this would possibly be above the mark there. It is, however, to be remembered, on the other side of the account, that the initial cost of the machine, the interest on the capital outlay on it, the difficulty of obtaining skilled men to work it, the difficulty of providing other suitable employment for such men when the machine is not at work, have all been left out of consideration.

13. These results are only of interest in making a comparison between the relative merits of steam-threshing and threshing by bullocks, and do not affect the question of refraction. As regards the latter point, it is immaterial whether clean wheat is produced by steam-threshing or in any other way. The crucial question is—will clean grain, however produced, fetch a remunerative price as compared with unclean grain, and the answer would appear to be in the negative, so far as wheat threshed with Messrs. Marshall and Company's machine in Behar is concerned, at least so long as the present system of refraction continues. Further experiments with the steam-thresher will, however, be made under more favourable conditions next year, and meanwhile it is hoped that improvements will be made by which, with suitable arrangement of sieves and screens, the machine will separate wheat from gram and oilseeds. There is not, however, in my opinion, the remotest chance of these machines coming into general use by ryots individually or collectively, though it is possible that large landholders here and there may purchase a few of them if a portable machine, carefully adapted to the conditions of Indian agriculture, can be supplied. Indeed, one such landholder, who grows wheat largely in Bhagulpore, has expressed a strong desire to obtain a machine of this kind, and has explained that the loss he suffered this year, by being unable to have his wheat threshed in due time before it became damaged by a fall of rain, would more than pay for one of Messrs. Marshall and Company's machines.

No likelihood of general use of steam threshers.

14. "Connected with the question of the condition in which wheat reaches this market is," the Chamber went on to remark—

Storage accommodation on railways defective.

"The very important question of the accommodation for it provided at up-country stations, especially on railways other than the East Indian line. It is hopeless to expect to improve the hold of Indian wheat on European market so long as there is nothing at certain times to prevent its reaching Calcutta weather-damaged. The

absence of proper and sufficient accommodation at railway stations for receiving wheat has mulcted shippers in very heavy allowances, and is one of the main causes of bringing Indian wheat into disfavour with home consumers. The wheat season extends from April to October, and as soon as the rains set in the lack of proper accommodation results in a portion of nearly every parcel arriving damaged. Not only is the shelter insufficient, but in many cases the railway platforms are not raised to the point of safety from casual inundations. The railways endeavour to protect themselves by granting to a consignor clear railway receipts against his indemnity note. This practice, when regard is had to the short time allowed at Howrah for the examination of wheat by consignees, and also to the limited facilities they enjoy for such an examination, results in large quantities of damaged goods passing undetected, to the manifest and serious loss of shippers.

"The Committee of the Chamber of Commerce would, in the best interest of the wheat trade, bring this question of the accommodation at up-country stations very strongly to the attention of His Honour the Lieutenant-Governor."

15. The complaints to which reference is here made relate, I believe, principally to up-country stations beyond the territories subject to the Lieutenant-Governor of Bengal; but it would no doubt be very desirable to provide further accommodation at Howrah and to allow greater facilities there for examination of wheat by consignees. The authorities of the East Indian Railway are fully alive to the importance of this question, and are, it has been ascertained, in correspondence with the Government of India regarding it.

Superiority of Buxar.

16. In my report, dated 7th July 1876, attention was called to the superiority of Buxar wheat to that locally grown in Bhagulpore.

Buxar seed was accordingly tried in many districts, and samples of the grain thus produced were sent to the Chamber of Commerce, together with samples of local grain, and their values were appraised. The results are shown in a table annexed in the Appendix. The results are not everywhere as satisfactory as might have been expected, but the quality of the Buxar grain is, it will be seen, almost everywhere superior to that locally produced. Further supplies of this seed are now being asked for. The best grain produced in Bengal and Behar is, it will be observed, that sent by the Manager of the Deo Raj in Gya, who will be asked to furnish more of this grain for seed.

29

From Director, Department of Land Records and Agriculture, Bengal, to Messrs. Ralli Brothers, Vale King & Co., and Petrocochino & Co., dated 2nd April 1887.

Enquiry as to prices for clean wheat.

It has been proposed to introduce wheat steam-threshing machines in Dumraon by which clean wheat can be produced. The Manager of the Dumraon Raj is willing to try one of these machines and produce pure wheat, if he can obtain a higher price for it than he would receive for the *same* grain mixed with dirt. I beg to enquire whether you are prepared to give a higher price for perfectly clean wheat grain than for the same quality of grain with an admixture of 5 per cent. of dirt. I should be glad to discuss the subject with any person whom you may depute to my office to-day between 3 and 4.

30

From Messrs. Ralli Brothers, to Director, Department of Land Records and Agriculture, Bengal, dated 2nd April 1887.

Ralli Bros.' reply.

We are in receipt of your letter of date, and in reply beg to inform you that the Manager of the Dumraon Raj had a long interview with us two or three months ago, when we explained the matter fully to him.

We told him that the most practical way for him to dispose of this question is to send us large samples of wheat with various admixtures, when we would make him our offer for each quality.

In a general way, we say that the clean wheat could obtain a higher price than the dirtier one; but the price paid will also depend on the special outlet which may exist at the time for the clean wheat. If the Manager of the Dumraon Raj is ready to offer us to-day clean wheat, stating the admixture and quality, then, if the price asked for is not too high as compared with the price asked for 5 per cent. stuff, we might see with our home friends whether there is any chance of doing business in wheat thus cleaned down.

31

Messrs. Vale King, & Co., to Director, Department of Land Records and Agriculture, Bengal, dated 2nd April 1887.

Vale King & Co.'s reply.

In reply to your favour of date, we shall be pleased to forward to London a sample of pure wheat with the object of being able later on to offer you a better price for such wheat than we can at present.

We must either sell in London on standard sample of No. 2 club, &c., or, for a specially good quality, on a sample submitted by the seller.

Our experience goes to show that the home buyers prefer buying on the ordinary standards to paying an extra price for a special quality; but we shall willingly try and introduce the better quality you proposed into the London market.

We regret that Mr. Petrie cannot wait on you to-day; but if you will appoint a time next week, other than on Tuesday, Wednesday or Friday afternoon, he will be happy to discuss the subject with you.

[Mr. Petrie afterwards did discuss the subject, and informed me that he could not guarantee a higher price, and added that Government might do something towards getting merchants in England to give higher prices for clean grain by introducing a new brand of wheat cleaned to 2 per cent. Messrs. Petrocochino referred me to the Chamber of Commerce and gave no further reply—M. F.]

32

Messrs. Ralli Brothers, to Director, Department of Land Records and Agriculture, Bengal, dated 23rd May 1887.

Ralli Bros.' report on wheat samples.

We have received the two samples you mention in your letter dated 18th May, and have to report on them as follows :—

1st.—Wheat threshed by the ordinary native method.—This sample

contains too many red grains, *viz.*, 35 per cent., and 65 per cent. white, whilst good Buxar quality should contain about 20 per cent. red and 80 per cent. white.

This sample would be worth to-day R2-13-6 per maund, whilst good quality wheat would be worth about R2-14-6.

The refraction of this sample is $5\frac{1}{8}$ per cent., so that if a seller delivers such wheat against a contract with 5 per cent. refraction, he would have to pay an allowance for the $\frac{1}{8}$ per cent. excess refraction.

2nd—Steam-threshed wheat.—This wheat is spoiled by the machine, many grains being broken, and we would not ship such wheat, as it would pay an allowance at home.

The refraction is $1\frac{7}{8}$ per cent.; but if this wheat were delivered against a contract allowing 5 per cent. refraction, the seller would obtain no advantage from the lower refraction it contains.

If, however, the wheat were sold on a sample and it did not contain the broken grains above referred to, it would obtain a higher price than the sample containing $5\frac{1}{8}$ per cent. refraction.

It is impossible to fix exactly the relatively higher value of the clean wheat until the requisite records have been received from the consuming countries; and all we can say at present is that, in a general way, the wheat, if not broken, would fetch a better price if sold on a guaranteed sample, or if the seller guaranteed by contract the lower refraction which the sample contains.

We do not know what opinion you will receive from the Association as we are not members. The above is our opinion.

33

Wheat and Seed Trade Association, Calcutta, to Director, Department of Land Records and Agriculture, Bengal, dated 2nd June 1887.

Wheat and Seed Association's report on samples.

I am desired by the Committee of the Wheat and Seed Trade Association to acknowledge receipt of your letter of the 18th ultimo to Mr. Clarke, and also receipt of the two bags of wheat produced at Dumraon in the Buxar sub-division, one steam-threshed and the other the same grain threshed by the ordinary native process.

In your letter you ask the Committee to appraise both and to let you know their relative values with their opinion on them generally.

In reply, I beg to say that the Committee have carefully examined the wheat in each of the two bags, and I am directed to send you the following report which embraces their opinion upon each of the two descriptions.

The bullock-threshed sample refracts 9 per cent., of which $8\frac{3}{4}$ per cent. is mud and other grain, and $\frac{1}{4}$ per cent. damaged and withered grains. Wheat with such an admixture is practically unmerchantable for export, and it is difficult to put a value on it as it is.

The sample of steam-threshed wheat refracts $3\frac{3}{4}$ per cent. according to the usual system of refraction, but of this $1\frac{5}{16}$ per cent. only consists of damaged grains and substances other than wheat, and $2\frac{7}{16}$ consists of grains crushed and broken by the machinery. This broken and crushed wheat is very unsightly in the sample, and would probably detract considerably from its value in the home market.

The colour is considerably inferior to good Buxar No 1 club, being very yellow, and the sample is much mixed with red grains. This wheat would not pass in this market as average Buxar No. 1 club, and it is difficult to place an exact value on it; but, if sold on sample, it would probably fetch about 1 anna per maund less than average Buxar, or say in the present market R2-14-6 per maund. It is doubtful whether with its present admixture of crushed and broken grains this wheat would sell for a better price than the same quality with an ordinary admixture of 5 to 6 per cent.

With reference to your enquiry as to what difference in price would a hundred maunds of the steam-threshed grain fetch over the sample threshed in the ordinary way, I am directed to give you the following figures:—

	R	a.	
100 maunds steam-threshed, at R2-14-6 .	290	10	
100 maunds ordinary threshed, at R2-14-6 .	...		
Less 4 per cent. excess refraction .	279	0	
Difference .	11	10	per 100 mds.

I return the bag of wheat as requested, and I also send you, by desire of the Committee, a sample of a good delivery of Buxar No. 1 club, and a sample of the Committee's standard of May shipments of No. 2 club, Cawnpore-Lucknow quality, which may be of use for purposes of comparison.

34

Messrs. Ralli Brothers, to Director, Department of Land Records and Agriculture, Bengal, dated 21st July 1887.

Ralli Bros.' experiments.

In reply to your last enquiry, what we have done is this—

We wished to see in a practical way the comparative value on this side and at home of cleaner wheat as compared to the average run of the dirtier stuff which is procurable.

As this cannot be so satisfactorily ascertained by bulky samples only, we instructed our agency at Buxar to purchase a parcel of wheat and despatch to us, one portion of it in its natural uncleaned state and the other portion after having reduced the refraction contained in it (*viz.*, everything which is not wheat) as much as they could.

Our agency has done this, and they sent us down two parcels, thus handled, of some 100 bags each.

At the same time we have received the respective invoices, and the result is the following:—

Comparative cost of cleaned and uncleaned wheat to exporters.

The wheat bought contained about 6 per cent. refraction.

The parcel despatched in its original state, *viz.*, with 6 per cent. refraction, costs us, arrived at Howrah, R2-14-4 per bazar maund.

The parcel despatched after having been cleaned down to about 3 per cent. costs us, arrived at Howrah, R2-15-11 per bazar maund.

The extra cost therefore of the cleaner wheat came to 1 anna 7 pie per maund, which is equal to about 10¾*d.* per quarter at home.

The expense of cleaning, taken by itself, is not a very heavy one, because it comes to about 3 pie a maund; but the final expense is so very much enhanced on account of the incidental expenses in the shape

of importing into godown, storing, repacking, exporting, etc., etc., which are incurred, and which, but for the cleaning, would be saved, and of course also by the loss of weight incurred, *viz.*, 3 per cent., whilst the expenses saved by not shipping this 3 per cent. are small only.

The original parcel was cleaned by hand labour and was cleaned twice; but in spite of this the refraction was not reduced to less than 3 to 3¼ per cent. on account of the food-grains which it contained, chiefly kessary and mussoory, which cannot be got rid of because they are of about the same size and weight as the wheat.

If we were to apply extensively the system of cleaning wheat, we might be able to improve matters somewhat, but not to any really appreciable extent.

The above parcels we are shipping to Marseilles, and when they arrive there they will be sold on their merits, and we shall know then what the actual result of the experiment will be; but as the extra cost of the cleaned wheat which I give you above is equal to quite half a franc per 100 kilos, we do not expect to obtain in Marseilles a higher price such as to compensate for the higher cost, and besides this, though the experiment made is a very practical one, it would require to be repeated so as to form a definite conclusion. Besides we cannot depend on having always a regular outlet for this wheat.

As I know that you take much interest in this question, I thought that you would like me to explain to you what we have done in a detailed way.

As regards the general question of Indian wheat on this side of India, nothing fresh has been done lately, and wheat continues to be shipped in the same way as previously.

Ralli Brothers' opinion how improvement may be effected.

As you know, my opinion on this subject is that an improvement in the condition, or rather in the amount, of impurities which are contained in the wheat shipped will result in accordance with the requirements of the consuming countries, *viz.*, if they wish to receive cleaner wheat and pay for it accordingly, cleaner wheat will be exported, because exporters will always adapt themselves to the requirements of the consumers.

At the same time, however, this result will also be obtained by the endeavours which the Agricultural Department will continue in the way of impressing on cultivators the necessity of supplying wheat as free of the admixture of other grains, etc., as they possibly can, because, as you will see also from what I write above of the experiment we made at Buxar, it is quite clear that whilst dust and such like matters can be extracted from the wheat, the edible grains, etc., which the wheat contains cannot be equally so, and these grains constitute a great proportion of the admixture.

In conclusion, my opinion is that the supplying of cleaner wheat cannot be forced upon either shippers or cultivators; but that whilst the former will conform themselves to the requirements of trade, the tendency of which is to receive purer wheat, the latter should continue to be urged by Government to bring down their wheat in a purer condition by restricting, as much as possible, the present system of sowing mixed crops and the like.

I shall be obliged by your informing me whether the information I give you is all that you require at present.

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Appraisement of Wheat samples from various Districts by the Chamber of Commerce, Bengal.

Locality.	Wheat growing to any extent or not.	Variety of wheat.	Value as appraised by the Chamber of Commerce.	Remarks.
I.—Bhagulpore—			*R a. p.*	
Experimental farm	Wheat growing	Buxar	2 14 6	
		Local	2 14 0	
Rungalal's farm.	Ditto	Buxar	2 15 6	
		Local	2 14 6	
Surjanarayan Singh's farm.	Ditto	Buxar	2 15 6	
		Local	2 15 0	
II.—Monghyr—				
Durgadas' field	Wheat growing	Buxar	2 14 6 to 2 14 9	
		Local	2 11 6	
Nawal Singh's field	Ditto	Buxar	2 15 6	
		Local	Uncertain.	
Sham Singh's	Ditto	Buxar	2 14 6	
		Local	2 11 0	
III.—Pubna	No wheat growing.	Buxar	...	Lost its character as Buxar wheat.
		Local	2 10 0	
IV.—Dinagepore	Ditto	Buxar	2 11 6	
		Local	...	Do. Do.
V.—Bogra	Ditto	Buxar	2 15 0 to 2 4 9	
		Local	2 9 6	
VI.—Tipperah	Ditto	Do.	Uncertain.	Unlike anything shipped from Calcutta; soft, but greasy in appearance.
VII.—Gya	Wheat growing	Local daudi	3 0 0	A fine wheat, superior to No. 1 club.
		Do red	2 12 0	Best soft red.
VIII.—Cawnpore	Buxar	.....	Sample not received.	Came, it is reported, to maturity at least 10 days earlier than Mozufernagur variety, and was remarkably free from rust. The outturn was also good.

36

Government of Bengal, to Director, Department of Land Records and Agriculture, Bengal, No. 3421-608, dated 16th November 1887.

In acknowledging receipt of your letter No. 1265, dated 18th August last, and enclosures, on the subject of the refraction of wheat, I

am directed to express the Lieutenant-Governor's satisfaction at the efforts made by you for the improvement of the quality of the grain exported from Bengal by the supply of the best seed, by aiding in experiments for introducing cleaning machinery, and by drawing attention to a trade custom which, even if adapted to immediate circumstances, must in the long run act as a bar to progress. The subject is one of the greatest importance from a commercial and agricultural point of view, as a slight improvement in the quality of the wheat exported from Bengal would probably lead to considerable increase in the price offered, and enable this province to compete on more equal terms with European and American countries. At the present moment there seems to be no opportunity for offering advice to the cultivators as to the admixture of foreign substances with wheat, and, until the conditions of trade alter, Sir Steuart Bayley agrees with you in thinking that the Government would not be justified in urging the ryots to accept the present loss involved in growing wheat without admixture of other crops. Cultivators are probably aware of the conditions of the trade which affect them immediately, and in particular know what price can be expected in the local market for grain of a particular quality, or in a particular state. But should the experiment tried by Messrs. Ralli Brothers in exporting wheat cleaned down to 3 per cent. refraction prove successful, and lead to a demand at paying rates for grain of that quality, or should a similar alteration in the trade be produced by other causes, it may be advisable to make the facts known to producers. It is doubtless true that an effective demand for grain of an improved quality must in the first instance be created, but should such a demand arise, its continuance will probably depend on the quality of wheat of the desired description which can be brought for sale.

Views of the Bengal Government on the question.

North-Western Provinces and Oudh.

37

Government, North-Western Provinces and Oudh, to Government of India, No. 1172—I-85, dated 6th July 1885.

I am directed to acknowledge the receipt of your letter No. 67A.—42-4, dated the 16th May 1885, forwarding copy of a Resolution recorded by the Punjab Government on the subject of the wheat trade of that province.

2. With reference to paragraph 11 of the Resolution, I am directed to say that the general question of warehousing grain, and also Messrs. Reinhold's special representation, have already been considered by this Government, and His Honour the Lieutenant-Governor and Chief Commissioner sees no reason to dissent from the views already expressed in paragraph 33 of Mr. Benett's letter No. 48T., dated 25th July 1884, a copy of which is appended to your letter under reply. The proposal of the Punjab Government to erect store-godowns at railway stations where octroi would not be levied, in the hope that traders would readily use them for storage of their grain, does not seem called for by the conditions of trade which exist in these Provinces, nor, so far, has the want of such

North-Western Province Government's views.

Warehouses not required.

store-godowns been generally expressed or felt by traders of the North-Western Provinces and Oudh. For purely storage purposes it is believed that such warehouses are not required except in times of very exceptional pressure, and on these rare occasions such accommodation as could reasonably be provided would prove insufficient For ordinary traffic the railway companies have made and are making sufficient provision. Traders would be deterred from using warehouses scattered along the lines of rail, by the difficulty and expense of maintaining proper supervision and control over their stocks at a distance from their places of business, and in some degree also by the loss of secrecy of their trade involved in the use of public warehouses. It has yet to be proved that the grain trade is diverted or indeed influenced by the presence of an octroi tax. The general experience on the subject, moreover, is believed to be adverse to the success in India of the warehousing plan, which has more than once been tried.

38

Note by the Director, Department of Land Records and Agriculture, North-Western Provinces and Oudh, dated 14th January 1887.

Report by Director, Agricultural Department.

The following remarks are offered in compliance with a reference made by the Government of India on the 24th December 1885. Copies of certain correspondence between the Government of Bengal and the Calcutta Chamber of Commerce were sent to me. Special attention was directed to the views expressed by the Chamber of Commerce in paras. 3, 4 and 5 (marginally noted) of their letter, dated 13th November 1885, to the Government of Bengal. I was asked to obtain the opinions of the leading merchants in Agra and Cawnpore and forward them with such remarks as I might have to offer.

"3. It is the opinion of the Chamber that Government officers should be instructed to continue to impress upon the cultivators and middlemen the importance of keeping their wheat as clean as possible, and of sowing, as far as practicable, different descriptions of produce in separate fields. It might also be explained to them that No. 1 club wheat or the Delhi and Buxar varieties of soft white grain, and No. 2 club, consisting of Cawnpore-Lucknow grain, command a higher price than other descriptions, and efforts might be made to introduce these varieties into districts where only the inferior qualities of grain, difficult of sale for export, have hitherto been cultivated.

"4. The mixing of dirt or inferior grains by mofussil dealers is a matter against which the Chamber is unable to suggest any remedy; but no doubt, when these dealers realise the loss sustained by the reduction of weight paid for, due to excess refraction, they will see their advantage in sending to the market wheat fit for immediate export, thus saving additional charges at the port of shipment.

"5. It is the opinion of the Chamber that much good would possibly be done in the direction of the development of the wheat trade by improving communications between the districts of growth and the different railway-stations by means of cart-road feeders. It is considered that central cleaning depôts are neither necessary, advisable, nor practicable, as the expense that would be incurred in using them for cleaning an article of such low primary value as wheat would increase the cost out of proportion to the improved price which might be obtainable for the cleaned grain in the home markets."

2. I consulted Messrs. Reinhold of Agra and Cawnpore, Mr. Wishart (representing Messrs. Begg and Sutherland, Cawnpore), and also a number of the principal traders in Meerut and Muzaffarnagar, both of which places are large wheat-exporting centres.

Messrs. Reinhold had already, in 1883, laid before the Local Government a scheme for cleaning and classifying wheat at Cawnpore and at such other central marts as might be selected. On being asked for an opinion on the points raised by the Calcutta Chamber of Commerce, they referred to their project of 1883 as embodying their views. Mr. Wishart favoured me, in April last, with an expression of opinion on the points raised, and I cannot do better than quote his own words. Mr. Wishart writes as follows:—

Mr Wishart's opinion.

"As regards the first point, whether cleaned wheat is to go to England or not, this depends on the London and Liverpool Wheat Associations and not on us in India. Cleaned wheat has been shipped time and again, and the experiment has always resulted in a loss, the reason being that the standards are fixed by the average quality of the first few shipments of the season, and if wheat free from small and damaged grain and containing (say) 2 per cent. of impurities only as against the customary 5 per cent. is shipped, it is a special article and can only be sold as such. Again, standard wheat may change hands half a dozen times before it reaches England, while a lot of special quality could only be sold on samples drawn after arrival, thus making the shipper take all the risk of fluctuation both in the wheat market and the rate of exchange. If the London merchants will demand wheat containing only 2 per cent. refraction, it can be supplied easily, as there is no grain that is easier to clean.

* * * * * * There are too many practical objections to the successful working of cleaning depôts to make it worth while to discuss the project seriously: the cost of the enormous area of buildings necessary, the difficulty of cleaning innumerable small lots separately, and the disposal of fifty or sixty different qualities. If anything of the sort is attempted, I think the best plan to follow would be the Chicago grain elevator system. They class wheat in three or four different standards only. When wheat is tendered to them, it is graded according to its quality and refraction and weighed off, and then run up into the room containing wheat of that standard, and a warrant is given for the quantity received. If damaged grain or grain containing anything like 5 per cent. refraction is tendered, it would simply be refused as 'below class.' This has had the effect in America of making both farmers and middlemen clean and store wheat properly, and it would have the same effect here.

"I do not think much good could be done by trying to induce cultivators to change the class of wheat which they sow, as the description grown in each district has in nine cases out of ten shown itself suitable for that district, and cultivators do not like being experimented upon. Could anything be done, however, to induce them to use seed that did not contain the usual percentage of barley, it would be a good thing, as it can only be cleaned out by the expensive machinery which the English mills have for this work. The Calcutta shippers have no one to thank but themselves for the fact that wheat is mixed with dirt and inferior grain by mofussil dealers For reasons of their own they have established 5 per cent. as the standard of refraction, and if a dealer was to send down wheat containing 2 per cent., they would not make him a pice of allowance for its extra purity. Again, it would not pay them if the wheat was brought down absolutely free from foreign matter, as many of them make their profit on the refraction—that is to say, consignments that they class, in taking delivery from the up-country dealers, as containing 6 and 7 per cent. (refraction) and pay for accordingly, will pass in London and Liverpool very often as below 5 per cent. Paragraph 5 of the Chamber's letter seems to me to be most unreasonable. It is admitted that the grain has to be cleaned in the home market before it can be milled, and it is unreasonable to maintain that it is cheaper to ship it home dirty, paying extra railway and steamer freight, insurance and labour at English rates, than to despatch it clean from up-country, provided a system can be introduced which will make it to the interest of either the cultivators or the middlemen to clean it."

On a subsequent reference made to him in June, Mr. Wishart writes:—

"Native and European dealers up-country maintain (in a falling market particularly) that, however clean the grain may be, an allowance is always claimed for

refraction. In the North-Western Provinces and Oudh, the Calcutta shipper is supposed to instruct his staff to get some allowance from the up-country dealers in both weight and refraction, and the dealers, to save themselves, are said to keep men down there (in Calcutta) to bribe the shippers' employés to pass the consignment on favourable terms, the consequence being that some are let off easily, while others are cut heavily. If there is any truth in these statements, it is quite easy to understand that the shipper in the long run does not now gain much by refraction, while his action has had the effect of greatly demoralising and lowering the tone of the trade. My statement that 'many of them make their profit by refraction' was based on an admission to that effect made to me some two or three years ago by a large Calcutta shipper, and I was under the impression that the practice was still in force. * *

"The general opinion up-country appears to be that were there an independent or reliable body in Calcutta, to whom questions of quality and refraction could be referred, business would be greatly facilitated. * * * * All the men I have spoken to agree that a great deal of bribery goes on at Howrah in connection with the giving and taking delivery of oilseeds and wheat, and this has had a very demoralising effect on the trade."

Statement by native traders.

3. The native traders whom I consulted in Meerut and Muzaffarnagar were chiefly commission agents, with no real stake in the wheat trade. They had no suggestions to offer. The only instructive remark which nearly all of them made was that they were afraid to venture to trade in wheat on their own account, because they felt themselves completely at the mercy of the Bombay and Calcutta dealers; that no matter how clean and pure the wheat they sent, they were certain to be mulcted heavily for refraction at the ports, and that, therefore, they preferred to act merely as middlemen between the producer and the exporter, making a small commission, and safe from loss.

I am bound to say that all the evidence which I have been able to obtain in the North-Western Provinces and Oudh goes to confirm the views expressed by Mr. Wishart.

4. I shall now state my own opinions on the points raised by the Calcutta Chamber of Commerce and on one or two cognate matters in regard to wheat production and export, and shall make, with all diffidence, some suggestions which have occurred to me as, perhaps, worthy of some consideration. My remarks must be regarded as referring, primarily, to the North-Western Provinces and Oudh.

Director's opinion.

First, then, in regard to the impurity of the wheat, the consequent high rate of refraction, and the proposal to establish local cleaning depôts for purifying the wheat, with a view to reducing the rate of refraction and enabling shippers to send a pure, clean article to the European market.

Practical working of refraction system.

There is no doubt whatever that, although considerable improvement has of late taken place, the wheat sent from these provinces to Calcutta and Bombay is still very far from pure. It generally contains a mixture of barley, peas, straw and chaff, and dirt varying from 3 to 6 per cent. It goes down by rail in bags. It is sorted at Howrah; if it shows impurity greater than 5 per cent., the excess (up to 7 per cent.) is deducted from the seller's invoice; if the impurities are over 7 per cent. the buyer has the option of refusing the consignment. For example: a bargain is struck between a Calcutta merchant and a Cawnpore trader for delivery of 500 maunds of wheat at Rs. 2-8-0 per maund. This price, it is understood by both parties, is really for 475 maunds of pure wheat and 25 maunds of impurities. The Cawnpore trader sends down 500 maunds containing impurities to the extent of (say) only 2 per cent.,—*i.e.*, 490 maunds of pure wheat and 10 maunds of impurities. The Calcutta

merchant therefore gets 15 maunds of pure wheat for nothing and thereby makes, what may be called, an unearned profit of nearly ₹40, or over 3 per cent. I do not say this is a common occurrence; but it has happened so, and it will, from time to time, happen again under the existing arrangement. On the other hand, it cannot be denied that the Calcutta shipper has sometimes to pay, in London, allowances for excessive admixture which he cannot recover from the country dealer.

Evil effect on up-country traders.

5. Now this is an evil, but it is an evil that may, perhaps, be said to be inseparable from the Indian trade as at present carried on. Prices are struck on the basis of a 5 per cent. refraction, and this fact is known to all who engage in the business. An up-country trader knows that he must either adulterate the wheat which he sends to Calcutta up to the 5 per cent. limit, or if he sends a purer article, suffer a loss in proportion to its purity, which loss may be a gain to the Calcutta shipper. The natural consequence is that the country trader in probably nine cases out of ten does adulterate the grain. But this is not all. It is a regretable fact that, as stated by Mr. Wishart and confirmed by undoubted testimony, agents of the Calcutta shippers do, in their negociations with country dealers, particularly when the market is falling, often strive successfully to obtain unfair allowances both in weight and in refractions; and that the country dealers, on the other hand, frequently protect themselves from excessive loss by bribing the underlings at Howrah to pass their consignments on more favourable terms than they are entitled to. It is these tricks of the business which are most damaging, for they give rise to uncertainty and insecurity which cannot fail seriously to obstruct the free course of the trade. In June 1885 the Calcutta Wheat and Seeds Association passed a resolution that all wheat purchased during the succeeding month of July should be on the basis of 5 per cent. refraction instead of 6 per cent., which is the customary rate for consignments coming after the 30th June in each year. The country dealers at once combined to defeat this movement on the part of the Association and to restore the 6 per cent. rate; they would not sell a bag of wheat at the 5 per cent rate. The shippers held out for a time, but eventually had to yield. This case has, I believe, been cited by interested parties to show that it is not the Calcutta merchants, but the country dealers who prevent pure grain coming to the market. Now I venture, subject to correction, to suggest that the reason why the native dealers refused to accept the 5 per cent. rate of refraction may have been, not because they were unable or unwilling to supply wheat of that degree of purity, but because they felt that any such reduction would still further increase the insecurity and risk of their business: for, as they doubtless reasoned, the lower the rate of refraction, the more easy it is to assert and the more difficult to disprove excessive impurity.

Reason why refraction cannot be abolished.

6. In the present state of Indian agriculture the refraction difficulty cannot be altogether removed. The mass of Indian cultivators will, for many years to come, grow mustard seed, or barley, in their wheat fields, and the grains must get mixed to a greater or less extent at harvest time. Then the grain is threshed out by cattle on the bare ground, when it must get mixed with earthy matter. The custom of sowing mixed seed is, I hope and believe, not so universal as it used to be, and every effort is being made to introduce a pure and high quality of seed: but still the

Abuse of the system the real evil.

custom largely prevails. Under these circumstances, refraction will always have to be considered in the course of the wheat and seed trade. The *real* evil to be got rid of is the insecurity felt by traders and the consequent risk to the trade from the abuse of refraction at the ports. There is, so far as I can see, only one remedy, and that is the establishment at the ports of an independent authority to determine all questions of refraction and classification. The present system of arbitration by members of the Calcutta Wheat and Seeds Association is a laudable effort to solve the difficulty. But apparently the up-country traders want something more independent than this. A committee of mercantile men, aided by an expert appointed by Government, would probably be a sufficient guarantee to all parties and would restore confidence.

Obstacles against cleaning depôts.

7. The question of local depôts for cleaning the wheat is a difficult one. If the tendency of the trade in these provinces was to concentrate at a few large central marts on the line of rail, I would be disposed to recommend establishment of cleaning depôts at these marts: because by such an arrangement the local exporters would be enabled to clean their wheat down to a certain refraction standard and thus satisfy themselves that their consignments were strictly up to the quality required for export. But the tendency of the trade is exactly the other way. Instead of concentrating at large marts, it is daily becoming more and more scattered. The concession by the railway companies of special freight rates for minimum consignments of 10 tons has encouraged export by driblets: and now, during the season, local export goes on from almost every railway station. It would scarcely be possible to establish cleaning depôts at all stations. The expense, both in prime cost, maintenance and supervision (which is indispensable), would probably be too great. Therefore, in lieu of small local cleaning depôts, I would recommend establishment at the ports of large cleaning and storing depôts.

8. This brings me to the most important of the suggestions which I venture to offer in this note.

Comparison of Indian and American freights and prices.

America is India's most dangerous rival in the wheat trade. She has limitless resources, a fertile soil, a magnificent railway service, the cheapest freights in the world both by land and sea, and she compensates herself for the costliness of manual labour by the extensive use of machinery. India, too, has enormous resources, a productive soil, and she has, what her rival has not, cheap labour. But the natural expansion of her trade is hampered by her comparatively limited means of communication by road and rail and by high freights of land carriage. The following figures will illustrate the advantage which America has over India in the competition for the wheat trade with the United Kingdom:—

One quarter (496lb) of wheat is carried from Chicago to New York at the rate of 6·25*d.* per 100 miles.

One-quarter (496lb) of wheat is carried from Cawnpore to Calcutta at the rate of 7·80*d.* per 100 miles.

The Indian rate would thus appear to be about 25 per cent. higher than the American rate.

The American wheat which is carried from Chicago to New York is pure and clean and in exportable condition. The Indian wheat which is carried from Cawnpore to Calcutta is weighted with 5 per cent. or more of pure ballast.

The American wheat is carried in bulk, loose in the cars. The Indian wheat is carried in double bags. The American wheat receives the least handling possible. The Indian wheat is handled in a multitude of ways both at starting and at its destination.

Indian disadvantages: high freight; successive handling; impurity.

Thus then, as the above figures show, India is burdened in her struggle with America (1) with a primary railway freight about 25 per cent. higher, (2) with an extra railway freight on 5 per cent. ballast, (3) with a further extra railway freight on bags, (4) with excessive handling, and (5) finally she comes into the English market with an article inferior in appearance, although, on the whole, not much inferior in quality to that of her rival.

The cost of raising one quarter (496lb) of wheat in America is about 14 shillings. The cost of raising the same quantity in the North-Western Provinces and Oudh is (at the present rate of exchange) about 11 shillings and 9 pence.

It is not, therefore, in the prime cost of wheat that India is at a disadvantage. For the same outlay she can raise nearly 20 per cent. more grain than America and of not much inferior quality; and, moreover, she has resources, in area and labour, to raise sufficient wheat to supply the entire demand of the British market. America, by her protective policy, is inflicting severe losses on the British manufacturing industry. India possesses within herself the means of compelling America to withdraw her hostile tariffs and open her market to the products of British industry.

What is needed.

9. To enable India to successfully meet American competition in the wheat trade, effort should be made—

(i) to send the best Indian wheat in the best condition to the London market;

(ii) to reduce to a minimum all charges between the producer in India and the consumer in England.

In other words, the wheat exported should be of the best quality, pure and clean, and freight and handling charges should be reduced to the lowest figure possible. As regards the quality of the grain, I shall have something to say afterwards. Meanwhile, what we have to do is to see that the grain sent to England is in a condition which will enable it to take an independent place in the home market and that its cost landed in London is such as to enable it to defy foreign competition.

Carriage in bulk.

10. The first step which appears to me to be necessary is to change the present system of carriage in bags to carriage in bulk—*i.e.*, loose in the wagons.

By carriage in bulk the following charges will be saved per quarter of 496lb between Cawnpore and Calcutta:—

(*a*) Cost of bags	12 annas.
(*b*) Bagging, marking, and sewing	1·5 „
(*c*) Freight on bags	2·5 „

or a total saving of ₹1, equivalent at present exchange to 16·5*d*.

If the grain were carried by sea in bulk also, the further saving in freight of bags would be ·75*d*., raising the total saving in freight to London to 17·25*d*. or 1*s*. 5¼*d*. The present cost of landing one quarter of wheat in England from Cawnpore (including price in India) is 31*s*.

10·93*d.* The reduced cost would be 30*s.* 5·62*d.* If by an arrangement which I shall shortly describe the grain is cleaned down to 2 per cent., refraction at the port, a further saving on sea freight of 2·5*d.* will be made, raising the total saving in freight to 19·75*d.* or 1*s.* 7¾*d.*, and reducing the cost of one quarter of wheat landed in London to 30*s.* 3·18*d.*

The quarter of wheat from Cawnpore (No. 2 club) fetches in London 32*s.* to 33*s.* 6*d.*

The competing American wheat costs 33*s.* 6*d.* landed in London, but fetches 36*s.* to 37*s.* per quarter.

11. The arrangements necessary on the Indian railway lines to enable wheat to be carried in bulk would neither be difficult nor costly. I am indebted to Mr. J. R. Muirhead, Traffic Inspector on the Oudh and Rohilkhand Railway at Benares, for the following suggestions in regard to these arrangements and their probable cost.

The railway companies have generally abundant spare ground at their stations. Let them set aside a portion of the ground, so that the grain can be brought direct to the station, instead of to the local market, and there taken over by the agents. Let shelter sheds be run up for receiving the grain in bulk, and let each agent have a compartment or bin for keeping his consignments separate.

Let the grain be loaded up into the wagons in bulk by baskets.

At most stations covered sheds already exist: so that the only expenditure would be for the bins or separate compartments. Each bin would cost, probably, not more than ₹100.

Alteration in wagon.

Certain adaptations of the existing wagons for carrying the grain loose would be necessary. Each wagon would require to have (say) six openings in the floor with sliding shutters, manipulated at the ends of the wagon, to open and close the holes: such an alteration would not interfere with the adaptability of the wagon for carriage of any ordinary goods when not required for grain traffic. A load-line would require to be painted inside each wagon, indicating the height to which the grain could be heaped.

The alteration could be made for ₹20, and the painting for ₹2 per wagon, or ₹22 in all. The wagons will need to be supplied with 12 plate springs, in order to enable them to carry 12½ tons in bulk instead of, as now, 10 tons in bags. But as the railway will gain by saving in haulage about ₹150 on every 50 ton lot from Cawnpore to Calcutta, this item should not be taken into consideration.

Delivery through cleaning shoots.

The wagons, on arrival at the port of shipment, should be run on elevated lines and the grain should be shovelled out of the wagons, through the openings in the floor, into shoots which should be constructed with alternate screens or sieves on the inside. The grain, while passing over these screens or sieves, will cleanse itself of dirt and small seeds, leaving the clean wheat to pass out at the base, either into bins for storage or into cargo-boats for immediate conveyance to the ship or steamer.

I am not in a position to say what the cost of the elevated lines would be, but the shoots with alternate screens would probably not cost over ₹500 each.

The saving in freight and handling effected by an arrangement of this kind would amount, as I have already shown, to ₹1 per quar-

ter, or 2 annas 8 pie per maund. The Benares railway bridge will cost, I am told, over 70 lakhs of rupees, and it will, when open to traffic, effect a saving of about 2 annas 10 pie per quarter. If this be so, surely the expenditure which I have described would be well worth incurring, seeing it would effect a saving in carriage of Re1 per quarter.

12. The important results which would accrue from carriage in bulk in the way described are :— Advantages from carriage in bulk.

(1) a large saving in freight and handling;
(2) greater carrying capacity in the railways;
(3) partial cleansing of the grain in the very course of its loading and carriage in bulk;
(4) complete cleansing of the grain at the terminal station through the shoots;
(5) reduction to a uniform *minimum* of the refraction;
(6) consequent highly improved condition of the grain sent to the London market.

The full saving of 1*s*. 7¾*d*. per quarter landed in England would, of course, greatly depend on the shipping companies consenting to carry the wheat in bulk. But if the trade took a decided turn in that way and the advantages of the new departure became apparent, the shipping companies would not be slow to make arrangements to suit the advancing trade.

13. It is, however, of primary importance that the London market should definitely fix the degree of purity, *i.e.*, the refraction of Indian export wheat. London is the buyer, but she is in reality in ignorance of the capabilities of this country. The London merchants imagine that nothing under a 5 per cent. refraction is possible, and they determine the standards from the first few shipments of the season. What is required is that the London trade should send out a competent representative to this country, who will, on behalf of the British trade, authoritatively fix the decree of refraction of the Indian wheat. It is idle to expect the Calcutta merchants to do this; and the up-country dealers have not sufficient confidence to risk a standard of refraction which could be easily and safely abused. Reduction in refraction percentage.

If the London trade were aware that a 2 per cent. refraction was not only possible but, under a system of carriage in bulk and self-cleaning at the port, cheap and easy, it is not to be doubted that they would fix the standard at 2 per cent., and that Indian wheat would rise in the European market. A very direct stimulus to higher-class cultivation in this country would be given; and *the one thing needful* would be supplied, *viz.*, the motive of self-interest in up-country traders would be brought into active operation and would re-act on the Indian cultivator in a way that no Department of Agriculture or any other power on earth can act. Let the desire and certainty of gain from trading in a high quality of wheat once firmly get possession of the Indian village trader, and it will not be long before the Indian cultivator takes to sowing pure seed, cultivating the best varieties, keeping his wheat separate from other grains, adopting improved methods and economies in his cultivation, and

developing into what no unaided Department of Agriculture can ever make him—a keen, enterprising, intelligent, clever, thrifty farmer.

Probable effect on cultivators.

14. Still Departments of Agriculture can do something if they only set about their business in the right way. And here I come to the points noted in paragraph 3 and the first part of paragraph 5 of the Calcutta Chamber's letter. As to preaching to cultivators on the necessity of sowing their wheat separately and inculcating the duty of not mixing, all I have to say is that the best sermon that can be preached is the hint to them by the village trader that, unless their wheat is very nearly quite pure, he will not buy it as wheat at all, but as a mixed grain at a low rate like gram and barley. If (as it would be) this hint were followed up by action at harvest, and the cultivators felt the loss they had sustained by not heeding the trader's warning, they would soon mend their ways and take to those better habits which the Chamber desire them to be lectured about by officers of Government. I venture to assert that if 2 per cent. refraction were authoritatively fixed by the London trade, and if the Calcutta trade (as they would be obliged to) demanded accordingly, pure wheat would be got, and this would be the best sermon to the Indian cultivator. The two essential points are:—

(i) that London should fix the standard, and that the whole Indian trade should be aware of its having been so authoritatively fixed;

(ii) that every question of refraction and classification should be disposed of by an independent authority at the port.

In this way alone can confidence be restored to the country traders, and unless there is confidence, it is vain to expect improvement. Once country dealers know that if they send wheat of 2 per cent. refractions as required in London, they will get the full price of this standard wheat and not be mulcted by intriguing agents from whose decisions about impurity they have no appeal and in whose fairness they have no trust they will see to it that the wheat sent is of the best and cleanest.

What the Agricultural Departments can do.

15. But, as I have said, Departments of Agriculture can do something. They can arrange for supply of the best seed at easy rates to cultivators all over the country, and they can encourage cultivators who sow it carefully by offering prizes for good samples exhibited at agricultural shows. It is in this way, perhaps, that the Department of Agriculture can best act on the mass of cultivators, and in so far as lay in my power with the means at my disposal I have acted in this way in the United Provinces. For the last two years quantities of from 800 to 1,000 maunds of specially selected and cleaned soft white seed have been annually distributed all over the country to cultivators whose names have been registered: prizes have been offered and adjudged to cultivators who have produced the best samples of grain from this and other seed; and most favourable terms for repayment, either in money or in kind at pleasure, have been arranged. The demand for pure seed from districts is constantly and largely increasing and will soon more than tax the powers of this Department to satisfy. Accordingly, I am now engaged in negotiating with members of the recently-founded Agricultural Association in these provinces for the establishment by them of a joint-stock company for supply of pure seed to all districts, the management being

Supply of pure seed.

subject to the control and supervision of this Department. His Honour the Lieutenant-Governor has shown the Association that he expects active and intelligent co-operation from them: he has given them much encouragement, and has recognised the good that such an institution is capable of doing. I have, therefore, every hope that success will attend it. But it is difficult to work without the co-operation of District Officers. Some look on all attempts to effect improvements as doomed to failure, refuse their sympathy and decline to co-operate. Fortunately, however, there are many officers who view such efforts in a different light and admit that, be the success great or small, it is the duty and interest of the Government to do all it possibly can to foster the agricultural industry of the country, on which everything—revenue, trade, administration—absolutely depends.

Co-operation on Court of Ward's Estates.

In the matter of supply of good seed and encouragement to the growers, District Officers can do a great deal. Words and acts of District Officers are powerful levers. If the Collector of a district showed that he wished a better class of seed sown, started in a small way a competition among growers, promoted the establishment of agricultural shows, awarded prizes for the best grain, and publicly recognised the most meritorious cultivators and zemindars, much good would be done; and if the Collector were only allowed to stay in his district and sustain the same personal interest for a few years instead of, as now, a few months, matters would improve rapidly.

Extension of railway communication.

16. As regards road and railway communications, to which the Chamber of Commerce allude, it is gratifying to find that the North-Western Provinces and Oudh are probably now foremost of all the Indian provinces. During the last three or four years railway extension has made rapid strides, and at the present moment there is no province in India so well served by railways as the North-Western Provinces and Oudh. Every rupee saved has been sunk in rails, engines and wagons: and export goes on with astonishing rapidity and freedom at numerous points all over the country.

Still there are, doubtless, tracts where railways would be both remunerative and useful. Here the Department of Agriculture ought to make itself useful in advising on those routes where railway communications would be most beneficial and therefore remunerative.

Feeder roads.

17. As to road feeders the same thing may be said. There are parts of these provinces (*e.g.*, from Bánda to Rájapur) which are still sadly in want of permanent road communications practicable for wheeled traffic all the year round; and perhaps the matter of good feeder roads needs more attention now than do the railways But it seems to me, from what I have seen and heard of the state of things elsewhere, that the outlets by good roads to the railway lines for the produce of these provinces are more numerous and more complete than those of any other province in India.

Initial impetus to improvement must come from English importers.

18. I would only repeat, in conclusion, that, in my opinion, endeavour in India to develope the wheat trade will be comparatively infructuous, unless backed up by influence in England. It is the London merchants who must give the initial impetus. That impetus once given, will be communicated rapidly from the ports to the large country marts, from the marts to the villages, and from the villages to the millions of

cultivators who raise the wheat, which, if it only can get a fair chance, will, ere long, outstrip its American and Russian rivals and firmly establish itself in the principal markets of Europe.

Since writing this Note the following case has been brought to my notice:—

In June 1886 three bags of old wheat belonging to a native agent of a well-known European firm were seized in Muzaffarnagar by order of the Magistrate and samples sent for examination to the local medical officer. The medical officer pronounced them to be quite unfit for human food. The agent on examination by the Magistrate stated that he had bought 24 maunds of the condemned grain and had used it for mixing with other wheat in the proportion of about 1 to 10. He added that before doing so he had reported to his employers that he was unable to buy wheat for them at the rate which they had allowed unless he was permitted to mix old wheat with new: and that he sent a sample of the mixture for approval. The agent produced copies of correspondence before the Magistrate which showed that the Bombay firm had approved of the sample and ordered their up-country branch to purchase accordingly. The agent further stated that the wheat he used for mixing was purchased by him at 33 seers per rupee at a time when good wheat was selling at from 16 to 18 seers per rupee.

It will be admitted that facts like these go far to confirm the opinions expressed in paragraphs 4 and 5 of my Note. If, as seems certain, a large European export firm gave its sanction to an admixture of 10 per cent of rotten grain—pronounced by medical authority to be unfit for human food—with good wheat for the Bombay market, what wonder is it that native dealers in the interior follow the example?

Punjab.

39

Government of the Punjab, to the Government of India, No. 259, dated 23rd December 1886.

Report by Punjab Government.

Adverting to correspondence ending with Mr. Bayley's letter No. 409A., dated 16th May 1885, on the subject of the construction of warehouses for the storage of wheat, and with special reference to paragraph 3, I am directed to forward, for the information of the Government of India, a copy of the correspondence marginally noted, and to say that the Lieutenant-Governor concurs in the opinion of the Financial Commissioner, expressed in paragraph 5 of his letter of 26th November, that, as attention has been drawn to the advantages of providing sufficient storage for grain and other commodities at the principal exporting stations on the railway, and a commencement has been made towards providing suitable accommodation at places where it is likely to pay, and where the local and municipal authorities are in favour of establishing warehouses, nothing more in the direction appears feasible at present.

Financial Commissioner's No. 1025, dated 26th November 1886, and enclosures.

40

Financial Commissioner, Punjab, to Government, Punjab, No. 1025, dated 26th November 1886.

Action taken in providing warehouses for storage.

On receipt of your letter No. 227, dated 29th July 1885, asking for a report on the subject of the construction of warehouses for the storage of wheat, enquiry was made from the Manager of the North-Western Railway as to the stations from which the greatest export of wheat and other grains takes place, and where in his opinion it is most desirable that warehouses should be constructed. In reply* he gave a list of the following stations:—

Hon'ble Colonel W. G. Davies, C.S.I.

* Manager, North-Western Railway, No 656, dated 1st March 1886, to this office.

1. Ludhiána.
2. Ferozepore.
3. Kasúr.
4. Lahore,
5. Amritsar.
6. Dinanagar.
7. Gujar Khan.
8. Mooltan.
9. Gujránwála.

2. On receipt of this reply the Commissioners of Lahore, Jullundur and Ráwalpindi, in whose divisions these stations are situated, were addressed and were requested to obtain from the Deputy Commissioners of the several districts in which the stations mentioned in the Manager's letter are situated reports as to the advisability of erecting warehouses at these places, after consulting the Municipalities adjoining the stations, the commercial public, and the railway authorities.

The result is given in the original correspondence herewith submitted as detailed in the margin, of which a précis also is appended to this letter.

Commissioner, Lahore, No. 682, dated 24th August 1886.
Commissioner, Rawalpindi, No. 557, dated 14th September 1886.
Commissioner, Jullundur, No. 3179, dated 16th October 1886.
Commissioner, Jullundur, No. 3194, dated 19th October 1886.

3. From this correspondence it will be seen that arrangements are already in train for erecting warehouses at Lahore, Kasúr, Batálal and Pathánkot; that at Amritsar a warehouse is considered unnecessary, as Messrs. Ralli Brothers have erected large sheds of their own for cleaning and storing grain; and that at the remaining stations mentioned by the Manager, North-Western Railway, the constructions of warehouses is, for the reasons given by the local officers, not considered feasible in the present state of feeling on the part of the traders.

4. At Gujar Khan, which is the largest exporting station on the Lahore and Peshawar Branch of the North-Western Railway, there is no municipality, and if further accommodation than that already in existence is required for the storage of grain, it must be provided by the railway administration itself. But the question at Gujar Khan must remain in abeyance until it is decided whether any change in the direction of the line will result from the surveys which are now in progress with the object of reducing the severe gradients at present existing on portions of the line

5. I am to add that the wishes of the Government of India have now been complied with. Attention has been drawn to the advantages of providing sufficient storage for grain and other commodities at the prin-

cipal exporting stations on the railway, and a commencement has been made towards providing suitable accommodation at places where it is likely to pay, and where the local and municipal authorities are in favour of establishing warehouses. Nothing more in this direction appears feasible at present.

41

Précis of correspondence forwarded by Financial Commissioner, Punjab.

Commissioner, Lahore's No. 682, dated 24th August 1886.

Reports of local officers.

In reply to our No. 1604 of 11th March 1886, forwards reports of Deputy Commissioners, with whose views he agrees.

Mooltan.

Deputy Commissioner, Mooltan—After consultation with Municipal Committee is of opinion that no bonded warehouse is necessary, the total amount exported being only 16,000 maunds.

Lahore.

Deputy Commissioner, Lahore.—Construction of a bonded warehouse at Lahore has been sanctioned. Site alone remains to be settled. Construction of a bonded warehouse at *Kasúr* is pending the sanction of a design.

Amritsar.

Deputy Commissioner, Amritsar.—No bonded warehouse required, more especially as Ralli Brothers have lately erected a large shed close to the goods shed of the station for cleaning and storing grain.

Gurdáspur.

Deputy Commissioner, Gurdáspur.—No godown necessary at *Dinanagar*, the accommodation at railway station being sufficient. Accommodation is required at *Pathánkot* and *Batála*. Exports at Pathánkot amount to four lakhs of maunds per annum. It is proposed to convert the sarai into a warehouse for storing grain and sugar. At Batála the Municipal Committee have recognised the necessity of some accommodation, and a sub-committee has been appointed to prepare plan and estimate.

Commissioner, Rawalpindi's No. 557, dated 14th September 1886.

Forwards letter from Deputy Commissioners, Gujránwála and Ráwalpindi. The most important point on the line in the district is Gujar Khan, where a warehouse is required, but the place not being a municipality no funds are forthcoming. Moreover, as that part of the line is being re-surveyed with a view to possibly altering its course, no definite proposals can be made till the result of the survey is known. The Municipal Committee, Gujránwála, thinks the proposal a good one, but cannot say whether it would pay. Apparently there is no urgent need.

Commissioner, Jullundur's No. 3179, dated 16th October 1886.

Forwards letters from Deputy Commissioners, Ferozepore and Jullundur.

Ferozepore.

Deputy Commissioner, Ferozepore—Is of opinion that such warehouses would be little used. Mr. Coates, grain merchant, has a large godown of his own, but has never had applications from native traders for the use of it.

Deputy Commissioner, Jullundur.—Neither the Deputy Commissioner, Municipal Committee, or the traders are in favour of erecting a warehouse. Jullundur.

Commissioner, Jullundur's No. 3194, dated 19th October 1886.

Forwards report from the Deputy Commissioner of Ludhiana. Deputy Commissioner and municipality are of opinion that bonded warehouses would not be used. There are two empty ones close to the station already. Commissioner suggests that warehouses divided into compartments, of which the hirer could keep the keys, within the railway yard, might be more popular.

42

Chamber of Commerce, Karachi, to Government of India, dated 26th October 1886.

Opinion of Karachi Chamber of Commerce.

I have the honour to acknowledge receipt of your letter No. 767-59—12A., Agricultural Department, dated Simla, the 30th September, with its accompaniments, on the subject of the wheat trade of the Punjab, and asking the views of the Chamber on the question of constructing warehouses at railway stations for the storage of grain.

In reply, I have the honour, by desire of the members, to say that this Chamber is of opinion that the construction of warehouses near railway stations for the storage of grain is a very desirable measure, and one calculated to promote and facilitate the trade passing from the cultivating districts to the port of export. The stations where such warehouses are erected should, however, be decided by the Local Government and railway officials on the spot, who are better able to say where such godowns are needed, and are also able to state the approximate extent to which the warehouses, if constructed, would be utilised.

43

Government of India, Public Works Department, to Government of India Revenue and Agricultural Department, No. 753 R.T., dated 22nd August 1885.

Demurrage charges on Punjab railways.

With reference to Revenue and Agricultural Department endorsement No. 67A.—42-4, dated the 16th May 1885, forwarding, for an expression of opinion, copies of correspondence on the subject of the necessity for providing facilities for the development of the wheat trade of the Punjab, the undersigned is directed to forward for information copies of reports by the Managers of the Punjab Northern and Indus Valley State Railways, on the questions of the demurrage charges levied by these railways and of the provision of warehouses, and to say that the Government of India in the Public Works Department endorses the opinions expressed by these officers.

2. The attention of the Revenue and Agricultural Department is, at the same time, invited to the remarks in paragraph 3 of the report of the Manager, Indus Valley State Railway, regarding the warehouses at Larkhana and the imposition of octroi duty.

44

Officiating Manager, Punjab Northern State Railway, to Director General of Railways, No. 3113, dated 17th June 1885.

As directed in your letter No. 329T., dated 13th June 1885, I have the honour to report on the questions raised in paragraphs 10 and 11 of Resolution No. 95, dated 19th March, by the Honourable the Lieutenant-Governor of the Punjab.

Wheat freights on Punjab Northern State Railway.

2. As regards the remark that railway freights to Karachi must run high, I would observe that wheat is carried over the Punjab Northern State Railway at a rate of $\frac{1}{8}$ pie per maund per mile, lower than which there is no rate for the carriage of wheat by railway in India. I should be very glad to see this made the through rate to Karachi, and trust that the through charge will be reduced next year.

Demurrage.

3. The charge for demurrage on goods is no doubt unpopular among the native community, but it can be altogether avoided, and considering that 48 hours or more is allowed for the removal of goods, it should seldom be incurred. The trader would like to leave his goods at the station at the risk of the railway for an indefinite period in many cases, hoping to dispose of them without any cost for cartage or storage. The general adoption of such a practice is obviously objectionable. The chance of theft would be greatly increased, and necessarily accommodation would have to be greatly enlarged.

Provision of warehouses.

4. The question of warehouses as depôts of trade is of the first importance, but the establishment of these has not been considered as falling within the duties of railway administrations. On this subject I would invite attention to Resolution in the Home, Revenue, and Agricultural Department, No. 5667, dated 30th April 1881. The establishment of such godowns on a proper system would do much to develop the grain trade of the Province, and would, in some measure, mitigate the want of feeder roads; but I am inclined to think that they would have the contrary effect to that mentioned in paragraph 2 of the Resolution, as on any sudden rise of the market rate all the traders having grain in the warehouse would desire its immediate despatch by rail. Be this, however, as it may, I am convinced that this question is in the first rank of importance, as regards the grain trade of the Province, but that it cannot be considered as a legitimate function of railway enterprise.

Your letter under reply and the connected papers have, as desired, been sent on in original to the Manager, Indus Valley State Railway.

45

Manager, Indus Valley State Railway, to Director General of Railways, No. 370, dated 3rd August 1885.

I have the honour to return your No. 329T., dated 13th June 1885, and enclosures, and to report as follows on the question of demurrage and warehouses.

Demurrage on Indus Valley State Railway.

2. It would, no doubt, be highly popular among the trading community if the railway charge for demurrage were abolished, until in a rush

of traffic the railway had entirely to stop carrying goods until its premises were cleared, which would be the inevitable result of allowing the railway premises to be converted into store-yards. Two clear days, not counting the day on which goods arrive, are allowed free of demurrage on this and connected lines. This seems a very liberal allowance. It compels a railway to find room free of charge for as much as it can bring in during three days; it acts as a powerful stimulant to traders to remove their goods rapidly, thereby allowing the railway to work to its full carrying capacity, and the amount received by a railway for demurrage is usually a very inadequate compensation for the loss, delay, and limit of its carrying power, caused by accumulations of goods during a rush of traffic to any particular station.

Warehouses and octroi.

3. Warehouses in the vicinity of stations would seem to be chiefly wanted as a means of avoiding the trouble and loss connected with the payment and refund of octroi. This was one of the principal objects which induced the local authorities at Larkhana to build bonded warehouses. This is one of the chief exporting stations on this line; the warehouses in question are very convenient, being close to the station, and are rented at a fair interest on their cost. In similar circumstances they might be useful elsewhere. But if octroi were abolished on all items of which local consumption bears but a small proportion to the export trade, we should, I think, hear very little of the want of warehouses.

4. The want of storage room at Sukkur is a very special case. Enormous quantities of grain and seeds now come to Sukkur by boat and take the rail at Sukkur for Karachi. Storage room is therefore required along the river front, which is close to the boats and the railway. This river frontage is limited: more ground requires to be occupied and served by fresh sidings at great cost; whereas perhaps in a few years, as railways extend in the Punjab, the amount brought into Sukkur by river may greatly diminish.

Freight rates.

5. The above two matters of demurrage and warehouses are the only ones referred to the Public Works Department, but I may perhaps be permitted to add a few remarks on some other points in the Punjab Government Resolution No. 95. Paragraph 10 admits and deplores that railway freight to Karachi must rule high. This seems rather unfair to this railway, which first introduced the present low standard of rates for grain and seeds in 1882, afterwards followed by the lines to the other ports, so that now the rates are almost the same, *viz.*:—

	Miles.	Rate per maund.
		R a. p.
Delhi to Bombay	888	0 11 0 grain. 0 11 6 seeds.
Lahore to Karachi	821	0 11 9 grain and seeds.

The low rates on this line are maintained notwithstanding a very poor passenger traffic as compared with other lines and an absence of traffic which can bear high ratee, so that the average sum received for carrying one ton one mile is lower on this line than on any other line in India.

6. That, as stated in paragraph 14 of the Resolution, the Sukkur bridge will give a great impetus to export trade and effect a saving in

time and money, is a fallacy so well known to you that I should not allude to it if it did not seem desirable to notice it when laid down on such high authority. The export trade suffers very little delay and no charge from the want of a bridge, and the rates to and from Karachi are already quite as low as in the case of the other ports.

Central Provinces.

46

Chief Commissioner, Central Provinces, to Government of India, No. 9038, dated 28th October 1886.

Referring to your letter No. 768—59-11, dated 30th September 1886, on the subject of the construction of warehouses near railway stations for the storage of wheat, which was brought to the attention of this Administration in Circular No. 67—42-4A., dated 16th May 1885, I am directed to forward a copy of a letter* recently addressed to the Government of Bombay, which will indicate what steps have been taken in this direction in these Provinces.

* No. 753S., dated 10th September 1886.

Acquisition of land for warehouses.

2. Mr. Fitzpatrick agrees with Mr. Crosthwaite in thinking that the action which has been taken in acquiring plots of ground in the vicinity of railway stations may be anticipated to effect all that can be expected of this Administration in this matter. It appears to be entirely in accordance with the views of Government regarding the co-operation of Government with private enterprise. This Administration has undertaken to provide sites for storage godowns at the places where they may be required. It rests for private enterprise to construct the godowns.

47

Chief Commissioner, Central Provinces, to Government of Bombay, Public Works Department, No. 753, dated 10th September 1886.

Referring to your letter No. 1678, dated 27th July 1886, with annexures, on the above subject, I am directed to inform you that it was decided by this Administration some time ago to acquire a plot of ground in the close vicinity of every railway station in the provinces which would serve as a site for warehouses should these at any time be required, and already a plot has been selected and taken up at nearly every station except those at which the existing traffic is quite insignificant. It is proposed to allot sites to private persons for the erection of warehouses on these plots either without charge or at a very low charge, and the Officiating Chief Commissioner, as at present advised, does not consider that he would be justified in incurring expenditure in order to do more than this, or that large sums should be spent either from provincial or local funds in erecting warehouses, especially at this time of financial pressure. In providing sites which traders might have a difficulty in acquiring for themselves, Mr. Fitzpatrick thinks that the Government is doing all that can be expected of it. The warehouses should be erected by the traders themselves, and they will certainly be erected when they are really required.

Warehouses should be erected by traders.

2. I am to add that it is by no means easy for the Government to determine beforehand at what places storage accommodation is likely to be made use of. The experience which Mr. Fitzpatrick has had of the well-meant efforts of himself and other officers in cases more or less similar has been that in a considerable proportion of cases buildings have been erected which have been but little used.

Berar.

48

Resident, Hyderabad, to Government of India, No. 454, dated 13th December 1886.

* * * * * *

3. The Resident considers that although careful selection of pedigree wheat for seed is not yet either the practice or even the aim of the cultivator in Berar, yet the correspondence under transmission shows generally that the presence of purchasers for the European market is bringing home to the people the benefit of attention to this point. What can be done in the way of instruction and advice in the shape of circular orders appears to have been imparted in the same spirit as that advocated by the Government of the Punjab. The Resident concurs in the Commissioner's view that the effect of prizes has so narrow a range that it hardly remunerates the cultivator for the expense and trouble of competition; and the exhibition of specimens is small, if not made compulsory, and in that case such a system does more harm than good. Mr. Cordery is not prepared to press for any more direct measures of encouragement than have already been effected; but the result of the experiments with new varieties of seed now going on will be watched with much interest and reported upon. Action taken in Berar.

49

Commissioner, Hyderabad Assigned Districts, to Resident, Hyderabad, No. 5913, dated 22nd November 1886.

* * * * * *

3. The Agricultural Association at Amraoti suggest among other things for the improvement and encouragement of wheat cultivation that prizes should be offered. I am of opinion that no good would result from offering prizes. The ryots now fully understand the mischief done by sowing wheat mixed with other grains, and buyers give them practical illustrations of the disadvantages of offering dirty wheat for sale in the market by offering lower prices for it and accounting for so doing by the sale of the wheat. A lesson thus learnt does the ryot more good than any amount of prizes would do, and he is keen enough to profit by the lesson when it so closely concerns his pocket. Prizes for wheat cultivation of little utility.

4. In 1883 a circular was issued advising cultivators to take care to sow nothing in the same field with wheat, and impressing on them the importance of keeping both the hard and soft varieties of wheat quite

distinct in preparing their seed for sowing; also in seeing that their floors are perfectly clean before they commence to thresh or winnow wheat, to put nothing but clean wheat into bags, and to see that on the way to the market dirt does not get into the bags. It was also explained that if these precautions are observed, the result will be an increase of the price at which their wheat will be bought. I do not think that we can do more than advise cultivators.

Improvement will result from influence of trade demand.

5. District Officers in Berar have also not been unaware of the importance of improving the quality of the wheat crop. Experiments instituted with this object have been made in almost every district. The Deputy Commissioner, Ellichpûr, obtained from the Nerbudda Valley as seed some of the best quality of wheat from there, but found that it utterly failed in Berar. All necessary change in this direction will no doubt be brought about by the mere fact that European buyers are in the market to offer higher prices for one quality of wheat than another. The cultivators are quite alive to their own advantages. Formerly no particular attention was given to the different qualities of wheat, but since buyers for the European market have arrived, the value of these qualities has been distinguished.

6. As regards the improvement and development of the wheat trade, the first great requirement in providing good roads is not lost sight of. The main lines of communications, which extend to over 655 miles, are kept in excellent condition. The several branch lines of district roads leading to the railways in each district, which extend to over 3,000 miles, are kept in good repair.

Warehouses sufficiently provided for.

As regards warehouse accommodation, storage sheds have been erected at Mulkapur, Nandura, Murtizapur and Dhamangoon. Those at the three places first named from local funds, and at Dhamangoon by Messrs. Ralli Brothers, who are amongst the largest exporters of grain in the province. Messrs. Ralli Brothers have also rented a piece of ground near the railway station at Amraoti, where they intend to store grain in sheds. The sheds erected at the railway stations abovenamed are only used by the people in the monsoon months, when the grain traffic is nearly over. At other stations on the line of railway the want of sheds is not felt, as the towns are close to the stations and traders store their grain in pits in the towns. Besides, during eight months in the year people can store their grain in the open ground with safety. During the other four months there is generally little doing, as roads are generally impassable, and when there is, the accommodation available at the stations as a rule suffices, for during these four months the cotton season is over and the wheat trade has the whole railway accommodation to itself.

50

Deputy Commissioner, Buldana District, to Commissioner, Hyderabad Assigned Districts, No. 1611, dated 25th June 1885.

Buldana.

In acknowledging the receipt of your letter No. 2923, dated 19th June 1885, I have the honour to state that there are no municipalities in this district, but the Deputy Commissioner, from local funds, has

erected sheds at the two principal stations, *viz.*, Mulkapur and Nandura, the right to collect the fees in which were lately sold by auction for the current year (1885-86) and fetched only R26.

2. These sheds are, in Berar at least, not required. The people can store their grain on the open ground with safety during eight months in the year. During the other four months there is generally little doing, and when there is, the accommodation available at the stations as a rule suffices, as during those four months the cotton season is over, and the wheat trade has the whole railway accommodation to itself.

3. I am requested to "submit proposals for the encouragement and increase of wheat cultivation and for the improvement and development of the wheat trade."

In reply, I have the honour to state that I have little to recommend except that on our roads broken stone metal be used instead of moorum, which will not stand the traffic, and that when this has been done all over the district, that then bridges be built instead of causeways as at present.

The railway returns for Berar, when compared with even those of the Central Provinces, will show that we are but little behind in our exports, which proves that we are doing very well and only require high rates in Bombay to again export wheat in almost limitless quantities.

51

Deputy Commissioner, Ellichpur District, to Commissioner, Hyderabad Assigned Districts, No. 1863, dated 18th August 1885.

Ellichpur.

I am uncertain if a reply is expected of me so far as measures in this district are concerned to your Circular No. 2923, dated 19th June last, *in re* the improvement and development of the wheat trade, for we are not on the rail and the city municipality is not called on to do anything.

2. In case it is, following the classification of the difficulties that present themselves in such matters under the two heads given in the resolution* accompanying your letter, *viz.*, as—

* Paragraph 4.

1stly—Economical,
2ndly—Administrative and physical,

Government interference with cultivation or trade deprecated.

I would say that the removal of the first lies chiefly, if not wholly, in the hands of the trade and in the hands of those whose personal interest is connected with wheat culture. Government, as Government, so far as my experience goes, can seldom in this direction usefully interfere. If the abuses or difficulties stand in the way of profits, trade instinct will certainly sooner or later clear them away. If they do not touch profits, they practically do no harm to those most interested, however theoretically undesirable they may appear to outsiders to be.

For example, to take the case of the delivery of dirty and mixed grain which is deplored in the resolution,† what keeps the practice alive? Nothing

† Paragraph 5.

but that the traders or their middlemen-representatives in the market make no difference in the price they offer between the sifted and clean and the dirty article. No body of men *in their own interests* are keener or sharper, I believe, than our kunbis, and as long as they see that they can get as good a price for the dirty and adulterated as for the cleaner and purer stuff, they will never take the extra trouble and expense that securing the latter obviously entails: why should they? The real fact is trade on the platform and in the press—trade, pushing the Government to do this and that—preaches a morality which in the market-place it does not practise.

Physical and administrative difficulties.

3. As to the second class of difficulties, the administrative and physical, I am not in a position as to the administrative to discuss the bearing of the Great Indian Peninsula Railway freight charges on our wheat trade, nor to assert that relief in this direction is either desirable or possible. Our physical difficulties, however, are gradually being overcome as the Public Works forecast drawn up some years ago is being worked out, opening feeders * to the main system of the Province, *viz.*, the Great Indian Peninsula Railway. It is not necessary in this letter to re-discuss the forecast proposals since work is annually being pushed on as rapidly as funds permit. All districts cannot be served at once; projects must of course take their turn in order of apparent merit, and they have also to wait on the departmental exigencies of the Department Public Works. For these reasons what was proposed here for the Duriapur taluk and in part for the Mailghat as more immediately desirable remains in part to be accomplished.

* Paragraph 7 of the Resolution.

52

Amraoti. *Deputy Commissioner, Amraoti District, to Commissioner, Hyderabad Assigned Districts, No. 544, dated 11th September 1885.*

* * * * * * *

Warehouses at Amraoti.

The next question is as to the facilities for storage of grain at railway stations; the Amraoti Municipality have discussed the subject on a former reference and arrived at the conclusion that there was no necessity for any godowns here, and that it would not pay them to erect them.

Messrs. Ralli Brothers, who are the largest exporters here, have rented a piece of ground near the station where they intend to store grain in sheds; other traders here store grain, I believe, in cellars in the town, and I have never noticed any inconvenience from want of sheds except perhaps during a scarcity.

I erected a small shed at Murtuzapur, which is, however, at present not much used; I have placed it under the local committee, and I intended if it was used to make another.

* * * * * * *

53

Deputy Commissioner, Akola District, to Commissioner, Hyderabad Assigned Districts, No. 1478, dated 18th October 1886. Akola.

In reply to your No. 2923 of the 19th June 1885, on the subject of the improvement of the wheat trade and the construction of warehouses near railway stations for the storage of wheat, I have the honour to report as follows:—

Encouragement and advice to cultivators.

Instructions have long ago been issued to all the tehsildars in the district in the spirit of those contained in the printed Resolution of the Punjab Government, copy of which was received with your letter under reply, and it now only remains to be seen whether the action taken will be productive of any satisfactory results. Cultivators in this province are, as a rule, alive to their own interests, as proved by the fact that favourable seasons have always been accompanied by extended cultivation of the staple; while seasons believed to be unfavourable have been attended with a large diminution of the area under the crop.

All that needs to be done is to encourage the cultivators to raise a better and more superior description of wheat than that usually raised in most parts, and in this direction the tehsildars have been asked to exert themselves.

Provision of warehouses by municipalities.

Referring to paragraph II of your letter under acknowledgment, I regret that nothing has yet been done either by municipalities or local committees in the matter of construction of warehouses near railway stations for the storage of wheat. The action taken in this district on receipt of Resident's Book Circular No. XII of 1881 and the subsequent letters from your office was duly reported in the letters from this office marginally noted.

No. 114, dated 24th January 1882, with endorsement No. 1301, dated 8th October 1885, with enclosures.

From this correspondence it will be seen that none of the municipalities feel justified in moving in the matter just yet. The fact is that local circumstances, and the carrying and removing capacity of the Great Indian Peninsula Railway at the stations in this district have hitherto been such that the want of a warehouse has never been keenly felt; and until such want arises, it can hardly be expected that any definite action will be taken by municipal or other local bodies in the direction of investing their funds in warehouses.

A copy of your present letter has, however, been circulated to all the municipalities in the district, in view to the subject being borne in mind whenever an opportunity should occur for giving effect to the proposals of Government in the matter.

54

Deputy Commissioner, Basim District, to Commissioner, Hyderabad Assigned Districts, No. 3045, dated 31st October 1885. Basim.

* * * * * * *

The wheat in this district grows so short that it has to be cut close,

Natural difficulties in cleaning wheat.

and this causes many roots with the mud sticking to them to be gathered; hence there is sometimes a certain amount of dirt that gets introduced with the grain. The threshing floors are what the people have always used, and no amount of talk or persuading will make them change these.

It will be years, if ever, before we can induce the ordinary cultivator to thresh wheat on a wood, canvas, or matting floor, or cleaning the grain with a fan.

The arrangement suggested in paragraph 5 of stacking wheat in sacks would be very expensive and inappropriate, as the sacks would have to be stored in some room and the wheat in them would be much more liable to injury from insects and rats than in the *poes* and *kangees* of the present day.

Machinery for cleaning grain at present is too costly to be introduced by private persons.

The admixture of other grains, such as "kardi" (rai) mustard, into wheat has been put a stop to as much as possible, but those cultivators who have only a field or two find it very difficult, owing to insufficiency of land for other minor produce.

The low price of wheat and its constant fluctuations compared with the high and steady price of linseed makes the latter a much more favourite crop in this district.

There are no large merchants in this district: all are petty traders.

How clean wheat might be obtained.

If cultivators could get good prices for the fine kinds of wheat and merchants would combine and refuse to take any but good and well cleaned wheat, the cultivators would soon learn that it is worth their while to grow the finer sorts and to clean their wheat more thoroughly; but as long as there is this great competition among merchants, and the kunbis can sell their dirty wheat and baser sorts for the same or nearly the same price as the finer and clean, they naturally will not put themselves out of the way to grow the finer sort or take the extra trouble in cleaning. The only remedy lies in the hands of the merchants themselves.

55

Secretary, Agricultural Association, Amraoti, to Commissioner, Hyderabad Assigned Districts, No. 111, dated 10th August 1885.

* * * * * *

Four causes injuriously affecting the wheat trade.

I find that the wheat trade of India suffers chiefly from four causes: (1) that the wheat prepared for markets here is mixed with soil and other smaller grains. This dirty condition of our wheat cannot command to it a high price; (2) that want of cheaper communication and export throughout the interior and exterior of the wheat-producing parts of this province; (3) that any such system or measure has not as yet been adopted by which the wheat-grower and traders might be always kept informed of the high rates paid to Indian wheats of the best description, of the classes of wheats preferred by foreigners, and of the measures and weights used in foreign markets; (4) that in the wheat-producing districts of India no large centres of trade are established and none of the

large centres at present existing are in proximity to any large railway station. Moreover, at such centres of trade no large and accommodating warehouses have been built.

All these defects have been demonstrated in the annexed Punjab Government Resolution, and measures for remedying these defects are also ably and exhaustively suggested. In addition to them I have to make a few remarks respecting each of them, which, I hope, shall be useful to promote the wheat trade of this province—

Remedies suggested.

1st.—Brokers or middlemen of grain trade should be specially requested to refrain themselves from receiving dirty or mixed grains, or at least to rate it at a very low price, or all grain brokers should be compelled to take licenses as is done by the cotton-market brokers. A set of rules for granting such licenses be framed and passed by the sanction of the Resident. In the body of these rules a section of the following purport be inserted :—that no license holder should ever encourage the sale of dirty or mixed grains under penalty of fine. The fund collected by the sale of these licenses be made over to the proposed Association, or the work of issuing such licenses be better entrusted to it. The Association should see its way at its earliest convenience and with the strictest economy to purchase from its savings some steam-threshing and cleaning machines.

2nd—Want of cheaper communication be supplied by extension of branch railways or tramways where possible. These branch railways or tramways should traverse all the places, small as well as large, throughout wheat-producing parts of this province. The proposals and plans for constructing such branch railways or tramways be made by the Association.

3rd—The Association, if formed, should be requested to prepare the statistical and other information which shall prove beneficial and encouraging to growers of as well as to traders in food grains.

4th—For the sake of experiment at present the following four railway stations be selected as centres of trade in Berar. Amraoti, Dammergaum, Khamgaum and Mulkapur. Warehouses, if practicable, be also built there. They may be built either by Government or by municipalities where they exist, or by the proposed Association.

With a view to develop and improve the wheat trade, &c., I have suggested four means above referred to. I have also connected the Association with each of these measures in its execution. For I am of opinion that if such a useful body be organised, and if the Local Government shall cordially assist and co-operate with it, a new era shall be opened in the history of commerce of this province.

In addition to all the measures, I also think that if the *export duty on grains* at least be lessened, it shall give a great stimulus to the exportation of grains from India.

Competition of linseed with wheat.

Native merchants argue that the linseed production has, for the last few years, been making rapid strides, as higher rates than wheat per khandi are being secured for it, and that, unless either the wheat should command the higher rate than linseed, or the linseed cultivation should decrease, production of wheat shall not be increased or encouraged; consequently, until any of the two things should happen, the wheat trade should neither be developed nor improved.

Ajmere.

56

From Chief Commissioner, Ajmere-Merwara, to Government of India, No. 742—250, dated 11th July 1888.

With reference to your office endorsement No. 1765 I., dated the 1st June 1885, forwarding, for information and guidance, copy of Revenue and Agricultural Department Circular No. 67A—42-4 regarding the provision of increased facilities for the wheat trade, I have the honour to enclose, for such orders as the Government of India may deem necessary, copy of a letter No. 1656 R, dated the 2nd July 1888, and of its enclosures, from the Commissioner, Ajmere-Merwara, from which it will be seen that the wheat trade of the district is very insignificant and the means of transport more than sufficient.

57

From Commissioner, Ajmere-Merwara, to Chief Commissioner, Ajmere-Merwara, No. 1656 R., dated 2nd July 1888.

With reference to the circular of the Government of India marginally noted, which forwarded a Resolution by the Government of the Punjab on the subject of the wheat trade of that province, I have the honour to submit the following report.

No. 67A—42-4, dated 16th May 1885, in the Revenue and Agricultural Department.

2. Before leaving Ajmere Mr. Whiteway, Settlement officer, noted that "the terms of this circular do not seem applicable to Ajmere-Merwara. "These districts," he observed, "are small in area, they produce but little wheat, and their export trade is practically inappreciable".

3. A return supplied to me by the Traffic Department of the Rajputana-Malwa Railway last year does not show what export of wheat there was by the railway, grain and pulses, including wheat, being all lumped together; but the Assistant Commissioner of Ajmere was informed by the Agent of the Railway last January that wheat was then being imported into Ajmere, and there can be no doubt as to the accuracy of Mr. Whiteway's remarks just quoted. A reference to the statement of crops cultivated in Ajmere-Merwara, appended to the administration Reports from 1880-81 to 1885-86, shows that the area under wheat increased considerably in 1882-83 and 1883-84 and decreased considerably in 1884-85. In 1885-86 it was under 5 per cent. of the total

area under cultivation in Ajmere. The figures for Merwara are not available.

4. The result of the inquiries made and action taken in respect to the circular under notice may be seen from the reports attached from the Assistant Commissioners, the Deputy Magistrate of Kekri and the Tehsildar of Ajmere. I agree with what Mr. Bayley writes on the subject. There seems to be no need and very little scope for administrative action at present. I will see what can be done to introduce the white wheat recommended as opportunity offers. When the cultivation of wheat is extended measures for cleaning it should engage attention. As to facilities of transport there is no ground for complaint at present. The suggestion made by the Tehsildar of Ajmere that the main points treated of in the Resolution of the Punjab Government might be embodied in a pamphlet and circulated in the vernacular, so as to keep before the cultivator the objects aimed at in it, appears to be worthy of adoption. It is possible that some simple directions on the subject have been circulated in the Punjab. If so, I should be glad to have copies of them.

58

From Assistant Commissioner, Merwara, Beawar, to Commissioner, Ajmere-Merwara, No. D.—122M., dated the 7th June 1888.

With reference to your letter No. 68 R., dated the 7th March 1887, calling for my remarks on the subject of providing facilities for improving the wheat trade in India, I have the honour to report that little wheat is cultivated in Merwara in comparison with other crops owing to its being subject to a disease known locally as "roli," a kind of red blight or rust, which first attacks the stem of the plant, and sometimes the ear, and injures the growth of the grain. There are two descriptions of wheat grown in this district, *viz.*, *baja* and *kata*. *Baja* is a soft red grain and is used for making into *atta*. *Kata* is a hard white grain and is suitable for dullea, soojee, flour, etc.

2. *Baja* is principally grown in the Beawar Tehsil, while *kata* wheat is more general in the Todgurh Tehsil. *Kata* is not so subject to "roli" as *baja*; on the other hand it does not fetch quite so high a price.

3. During the last year I found that in the Todgurh Tehsil, owing to the damage sustained by the opium crops from frost, and a fall in the price of opium, the zemindars were cultivating wheat where they used formerly to grow poppy.

3. The trade in wheat in the Beawar market has lately become brisk, and although most of the wheat comes from Marwar, yet this will also effect, to a certain extent, the cultivation of this grain in the district. Improvement of the means of communication within the district would tend to facilitate the trade in this as well as the other products of the district, for which a ready and brisk market exists at Beawar, and this being an imperial question, I would venture to suggest for your consideration in this connection whether the main road running down Merwara should not be kept up as an imperial road. If the road were made easier for traffic it would reduce the cost of transport and thus facilitate trade.

59

From Assistant Commissioner, Ajmere, to Commissioner, Agmere-Merwara, No. 63, dated 16th January 1888.

In acknowledging the receipt of your letter No. 67R., dated the 7th March last, I have the honour to enclose a translation of a report by the Deputy Magistrate of Kekri and a copy of a note by the Tehsildar of Ajmere on the subject of wheat. The result of the experiments which it was proposed to try and which are, I presume, now being carried out in Kekri may be awaited, but it will be observed that the Tehsildar practically agrees with Mr. Whiteway in thinking that no action on the part of the district authorities is likely to be of much use, as Ajmere is not, to any great extent, a wheat-producing district, and it is hardly a wheat-exporting district at all. At the present time, I was recently informed in conversation by Major Bissett, wheat is being imported into Ajmere from the southern districts of the Punjab. The area of irrigated land is small, and is generally as fully cultivated as the amount of irrigation possibly admits. The cultivation is fairly careful, and the zemindars may be trusted to cultivate the crop that pays them best. If they can profitably produce more wheat they will do so; if other crops pay better, they will and ought to cultivate the latter. There is no want of facilities for export. The roads no doubt are not good in many places, but they are everywhere passable, and cotton at present finds its way from all parts of the district to the various presses at Beawar, Kekri, Nusseerabad, and Kishengurh. A sufficient rise in the price of wheat would, I have no doubt, be followed by an extension of cultivation of any sort for which there is a demand: until this occurs, I doubt whether Government can usefully take any action.

Translation of a Rubkar from the Deputy Magistrate of Kekri, dated 13th June 1887.

Having assembled the traders and lambardars of Kekri together, the contents of Circular No. A. 67—4204, dated 16th May 1885, of the Government of India, Revenue and Agricultural Department, were announced to them. On inquiring into the condition of progress of wheat cultivation, they unanimously said that in that part of the district the average yield of wheat per acre of *chahi* (land irrigated by well) was from 2 to 4 maunds, and that of land irrigated by tank was from 5 to 12½ maunds. The nature of the soil did not admit of the cultivation of white wheat, as it turned wheat of any sort sown into it in a sort of hard red wheat, but the zemindars would be instructed to cultivate white wheat. The zemindars would not at once adopt the cultivation of the white wheat because the seed is not obtainable here immediately, but some big zemindars will be persuaded to make an experiment to sow white wheat in two or three beds of their respective fields. If the experiment proves successful, the cultivation of white wheat will be extended. Attention will be paid to the matter of cleaning the wheat. The traders say that if the wheat is not properly cleaned they can have

it cleaned so as to make it fit for export. Government should arrange for the godown, etc., and I also agree with this proposal.

Note by Tehsildar of Ajmere.

I have consulted the chief traders and lambardars on the subject. The produce of wheat in this district is very scanty. It is hardly sufficient for the requirements of the place, and consequently very little, if any, is ever exported There is no doubt that the advantages to be derived from turning out a clean sack of wheat are considerable, and in most parts of India people will be much benefited by the suggestions contained in the above circular. But the case is quite different in Ajmere. Apart from there being a scanty produce of wheat, there are no big agriculturists here in the khalsa villages, where people are involved in debts and are entirely at the mercy of the middlemen. There are no big zemindars like those in the North-West Provinces and the Punjab, who would undertake the heavy expenditure of purchasing winnowing machines with a view to cleaning grain for export. The simplest mode suggested in the circular, that of cleaning wheat on a wood, canvas or matting floor, could with advantage be adopted here, but in the khalsa villages I am afraid it would be rather difficult, considering the state of the agricultural class in general. Almost all men of these classes live from hand to mouth, and can hardly afford to make any improvement in the system whatever. Should it, however, be considered desirable to make an experiment in the district, the best course would, I think, be to induce some of the well-to-do istimrardars, such as the Rajah of Bhinai or the Rao of Masuda, etc., to make a commencement. For instance, an experiment might in the first place be made in places like Jalia and Barl where the soil is very fertile and could grow better sort of grain. As a rule people in general grow red wheat here, and the soil of this place is, I understand, adapted for such sort of grain. The soil being generally rather hard soft white wheat would not grow. The ground being rockish, the grain in these districts is often mixed with stony substance and is seldom found clean. The attention of the people will be drawn to this very important subject. The circular under reference is no doubt a very valuable acquisition, and with a view that the people grasp the subject thoroughly, I would propose that an abstract of the main points requiring special attention might be translated, and about 500 copies printed for circulation, provided it is thought expedient to make an experiment in some of the istimrari estates. But with the scanty produce of the grain in the district such a course would not be necessary.

APPENDICES TO PART I.

Appendix A.

Correspondence in 1886, 1887 and 1888 between the Bombay Chamber of Commerce and the various Corn Trade Associations in the United Kingdom regarding measures for the improvement in cleanliness of Indian wheat. (Reprinted from the Chamber's Annual Reports.)

1

Chamber of Commerce, Bombay, to Chairman, Corn Trade Association, London, Liverpool, Glasgow and Hull, dated 12th November 1886.

Reduction of "refraction" proposed.

I am directed by the Committee of the Chamber to invite the co-operation and assistance of your Association towards securing, if possible, an improvement in the cleanliness and condition of Indian wheat as shipped to European markets.

The results of a recent conference with the leading firms engaged in the trade here seem to indicate that the movement would require to be initiated on your side, and my Committee trust you will be disposed to place their suggestions before the members of your Association with the advantage of your countenance and support.

From the information which the Chamber has been able to obtain there seems no reason to doubt that wheat as originally cleaned by the farmer seldom contained more than about 1 per cent. of admixture. Owing to the practice having sprung up of allowing 4 per cent. as the basis which arrival contracts are effected, the custom of increasing the refraction up to that point has gradually been established, and from the keen competition which exists, the probability is that the tendency is rather to exceed that limit than otherwise A shipper under an arrival contract, in fact, has no inducement to insist on his sellers delivering wheat with a lower refraction than 4 per cent., but if your buyers were to base their purchases in future on contracts which stipulated for an admixture not exceeding 1 or 2 per cent., the grain would require to be cleaned up to that standard, and the addition of dirt by the farmer, or after the produce left his hands, would in a short time practically cease.

To the miller or consumer no arguments are required to demonstrate the numerous advantages of being able to obtain clean grain, but to others less closely affected the direct benefit may not be so readily apparent. All will admit, however, that any material reduction in the first cost of the article must be not only for the benefit of the producer and the country at large, but also for that of others interested, either as exporters, importers, or dealers; and the following figures, showing that an admixture of 4 per cent. of dirt means a burden of something like 1¼ per cent. on the Indian wheat trade in its competition with other

countries, afford of themselves a conclusive proof of the desirability of instituting a reform :—

Railway fare from Delhi on 4 per cent. of 492lb was equal at 1*s.* 6*d.* exchange to	2½*d.* per quarter.
Steam freight at 20*s.* per ton of 18 cwt. was equal on 4 per cent. to	2½ „
TOTAL .	5 „

Shipments from Bombay in 1885 were 602,000 tons, or 2,470,000 qrs., which at 32*s.* 6*d.* per qr. amounted to £4,010,000. Five pence per qr. totalled £51,000, or, as nearly as possible, 1¼ per cent. of £4,010,000.

As already remarked, my Committee have taken care to ascertain the views of those most largely connected with the exports of wheat from this port, and the opinion of the majority is that the suggested improvement in the cleanliness of shipments would be a great advantage, as also that the movement, to be successful, should originate on your side, and take the form of basing all arrival business from a date hereafter to be fixed on an admixture of dirt not exceeding 2 per cent.

2

Liverpool Corn Trade Association, to Chamber of Commerce, Bombay, dated 3rd December 1886.

Reply of Liverpool Corn Trade Association.

Your favour of 26th ultimo is duly to hand, and I am instructed to state it is with much pleasure that my Directors receive this support to a reform which they have advocated for some time. Your letter has considerably strengthened their hands, and you may rest assured that they will do their best to have your views carried into effect at an early date.

I shall have much pleasure in reporting progress in due course.

3

London Corn Trade Association, to Chamber of Commerce, Bombay, dated 11th February 1887.

Reply of London Chamber.

Referring to your letter of the 12th November last addressed to my Chairman, I am desired by him to reply that the Committee of this Association, while fully alive to the importance of Indian wheats coming forward as clean as possible, is of opinion that the character and value of Bombay wheats must depend mainly on the efforts of the Chamber of Commerce to check the admixture of foreign substances.

It has been the custom of the East India Wheat Committee when making up standards to exclude all samples showing an undue admixture of dirt which has been emphasized by the Resolution of the Executive Committee consequent upon your letter, copy of which I enclose.

By adhering to this rule, and enforcing it as strictly as possible, the Committee is of opinion it will best assist the Bombay Chamber of Commerce in the object it has in view.

COPY OF RESOLUTION.

"That it be an instruction to the East India Wheat Committee to exclude any samples containing excess of dirt from the standards, and that a letter be written to the Bombay Chamber of Commerce informing it of the action the London Corn Trade Association had taken, and requesting it to use its efforts to prevent, as far as possible, the shipment of dirt in Indian grain of all kinds."

4

Extract from the Report of the Bombay Chamber of Commerce for the year 1888.

Summary of action taken by Bombay Chamber.

In February last the Liverpool Corn Trade Association adopted a resolution to the effect that "no standards of choice" or No. 1 white Bombay wheat be made up for the coming season, but that the words "Liverpool standard" as applied to these descriptions shall mean—

(*a*) In the case of "choice" white Bombay wheat containing not less than 93 per cent. of soft white club wheat, and not more than 4 per cent. of soft and hard red, nor more than 3 per cent. of dirt, seeds and grain other than wheat.

(*b*) In the case of No. 1 white Bombay wheat containing not less than 85 per cent. of soft white club wheat, and not more than 12 per cent. of soft and hard red, nor more than 3 per cent. of dirt, seeds and grain other than wheat.

This resolution having been brought to the notice of your Committee they deemed it desirable to discuss it in conjunction with a full meeting of the members of the Chamber most largely interested in the trade; and on 9th April a meeting was held at which the following gentlemen were present:—

The Hon'ble F. FORBES ADAM, C.I.E., *in the Chair.*
H. W. ULOTH, Esq., P. & O. S. N. Co.
A. F. SIMPSON, Esq., NEW ORIENTAL BANK.
Major W. S. S. BISSET, R.E., C.I.E., B. B. & C. I. RAILWAY.
A. PALLIS, Esq., M. SCOULOUDI, Esq., } Messrs. RALLI BROTHERS.
A. F. BEAUFORT, Esq., Messrs. LYON & Co.
H. C. WRIGHT, Esq., THE BOMBAY COMPANY, Ld.
W. M. MACAULAY, Esq., J. M. RYRIE, Esq., } Messrs. EWART, LATHAM & Co.
W. LANG, Esq., Messrs. LANG, MOIR & Co.
L. BERGL, Esq., Messrs. DREYFUS & Co.
J. STEINER, Esq., Messrs. VOLKART BROTHERS.
P. LEUTHARDT, Esq.
W. A. BANKIER, Esq., Messrs. FINLAY, MUIR & Co.
L. R. W FORREST, Esq., R. L. STEWART, Esq., } Messrs. KILLICK, NIXON & Co.
VIZBUCANDAS ATMARAM, Esq., Messrs. NARANDAS RAJARAM & Co.
H. W. PATRICK, Esq., Messrs SAMUEL SANDAY & Co.
R. A. WILLIS, Esq., Messrs. C. H. B. FORBES & Co.
R. S. CAMPBELL, Esq., Messrs. W. & A. GRAHAM & Co.
J. FACHIRI, Esq.

As the result of a somewhat prolonged discussion the following resolutions were passed :—

I. That the refraction on "choice" and No. 1 club wheat shipped to Liverpool shall be fixed at not over 2 per cent.

II. That the admixture shall not exceed in "choice" 6 per cent. of other than soft white, and in No. 1, 13 per cent. of other than soft white.

III. That a copy of the resolutions passed to-day be sent to the London Corn Trade Association by the Chamber, adding that as shippers are anxious to improve the quality of Indian wheat they hope the London Association will be willing to limit the refraction on Bombay wheat to 2 per cent.

In accordance therewith the Committee addressed the Liverpool Corn Trade Association and the London Corn Trade Association respectively. The former replied that in order to meet the views of this Chamber the Directors had adopted the following analysis as the basis of the Liverpool standards of Bombay wheat :—

For Choice White Bombay Wheat.

Not less than 93 per cent. of soft white club wheat.
Not more than 5 per cent. of soft red and hard wheat.
Not more than 2 per cent. of dirt, seeds and grain other than wheat.

For No. 1, Bombay Wheat.

Not less than 85 per cent. of soft white club wheat.
Not more than 13 per cent. of soft red and hard wheat.
Not more than 2 per cent. of dirt, seeds and grains other than wheat.

They did not, however, see their way to reduce the percentage of white wheat in the standard of "choice," more especially as contracts had already been made on the basis of 91 per cent. of white wheat.

The London Corn Trade Association did not apparently perceive the necessity of adopting this Chamber's suggestion, their reply being to the effect that as no demand had been made on the part of buyers to alter the terms of the existing form of contract for Indian wheat, and as there was also a difference of opinion on the subject on the part of sellers, the Committee of the Association did not see their way to carry out the resolutions of the Bombay Chamber.

Your Committee cannot but regret that their efforts to obtain a legitimate basis for the trade have thus proved practically unavailing, convinced as they are that the only sure means of improving the cleanliness of the wheat shipped from this country is for buyers in Europe to insist upon getting a cleaner article. Shippers could with little difficulty comply with any reasonable standard of cleanliness, but so long as home consumers are willing to contract for wheat containing a certain percentage of refraction to ship anything better would mean so much absolute loss.—(*Appendix X.*)

5

Circular of Bombay Chamber of Commerce to its Members, dated 15th March 1888.

I am directed by the Committee of the Chamber to circulate, for the

information of members, and for the favour of opinion, the accompanying copy of a letter which has been addressed to a number of the firms interested in the wheat trade between Bombay and Liverpool.

If the conditions of the proposed terms of contract are not such as commend themselves to exporters from this side, the Committee will be prepared to make a representation on the subject to the Directors of the Liverpool Corn Trade Association.

6

Liverpool Corn Trade Association, to Bombay Chamber of Commerce, No. 123, dated 15th February 1888.

DEAR SIRS,—I am instructed to hand you the annexed copy of a Resolution adopted at a recent meeting of the Standards Committee of this Association, and to ask whether, in the event of its being confirmed by my Directors, you would be prepared to make contracts on the basis indicated by the Resolution.

COPY OF RESOLUTION.

"That no standards of choice or No. 1 white Bombay Wheat be made up for the coming season, but that the words "Liverpool standard," as applied to these descriptions, shall mean—

(*a*) *In the case of Choice White Bombay*—Wheat containing not less than 93 per cent. of soft white club wheat, and not more than 4 per cent. of soft and hard red, nor more than 3 per cent. of dirt, seeds and grain other than wheat; and

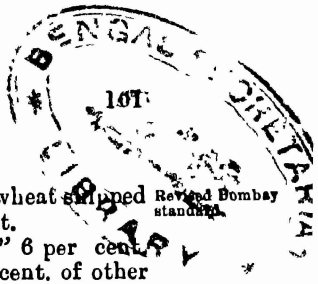
(*b*) *In the case of No. 1 White Bombay*—Wheat containing not less than 85 per cent. of soft white club wheat, and not more than 12 per cent. of soft and hard red, nor more than 3 per cent. of dirt, seeds and grain other than wheat."

7

Bombay Chamber of Commerce, to London Corn Trade Association, dated 20th April 1888.

Co-operation of London invited.

DEAR SIR,—At a general meeting of the representatives of firms engaged in the export wheat trade from Bombay, held under the auspices of the Chamber on the 9th instant, the following resolutions were adopted as the basis on which future contracts should be made for wheat shipped to Liverpool; and I am directed by the Committee of the Chamber to await upon you with copies of these resolutions and at the same time to add that as shippers from Bombay are anxious to improve the quality of Indian wheat, they hope your Association will be willing to join the Liverpool Trade in limiting the refraction on shipments from Bombay to 2 per cent.



RESOLUTIONS.

I.—That the refraction on "choice" and No. 1 club wheat shipped to Liverpool shall be fixed at not over 2 per cent. Revised Bombay standard.

II.—That the admixture shall not exceed in "choice" 6 per cent. of other than soft white, and in No. 1, 13 per cent. of other than soft white.

III.—That a copy of the resolutions passed to-day be sent to the London Corn Trade Association by the Chamber, adding that as shippers are anxious to improve the quality of Indian wheat they hope the London Association will be willing to limit the refraction on Bombay wheat to 2 per cent.

8

Bombay Chamber of Commerce, to Liverpool Corn Trade Association, dated 20th April 1888.

Sir,—I am directed by the Committee of the Chamber to wait upon you with copies of resolutions passed at a meeting of firms interested in the export wheat trade from Bombay, held under the auspices of the Chamber, to discuss the proposals regarding standards, accompanying your Circular letter of 15th February. My Committee trust that the Directors of your Association will see their way to adopt the slightly modified terms which have been approved by the trade here. The only differences from the basis which your Association has laid down consists in "choice" being allowed an admixture of 6 per cent. of other than soft white in place of the 4 per cent. soft and hard red proposed by you; and in the case of No. 1, 13 per cent. of other than soft white in place of 12 per cent. of soft and hard red, the refraction in both qualities to be 2 per cent. instead of the 3 per cent. proposed. The general feeling of the trade here is that with these alterations business would be much more practicable than on the percentages suggested by your Association, and the reduction in the refraction would have the tendency to produce a cleaner article, which there seems little doubt is obtainable here if a proportionate price can be got for it from buyers on your side. Acceptance of above solicited.

9

London Corn Trade Association, to Bombay Chamber of Commerce, dated 11th May 1888.

Dear Sir,—I beg to acknowledge receipt of your favour of the 20th ultimo, which has been laid before the East Indian Grain Committee, and the members, having given your request full consideration, direct me to say, in reply, that as no demand has been made on the part of buyers to alter the terms of the existing form of contract for Indian wheat, and as there is a difference of opinion on the subject on the part of sellers, the Committee does not see its way to carry out the resolutions adopted by your Chamber of Commerce. Refusal of London Corn Trade Association.

10.

Liverpool Corn Trade Association to Chamber of Commerce, Bombay, dated 12th July 1888.

Standards finally adopted by Liverpool.

DEAR Sir,—I am instructed to inform you that your letter of 20th April has been carefully considered by my Directors, and that, in order to meet your views as far as possible, they have adopted the following as the analysis of the Liverpool standards of Bombay wheat:—

(*a*)—*For Choice White Bombay Wheat*—

Not less than 93 per cent. of soft white club wheat;

Not more than 5 per cent. of soft red and hard wheat, and not more than 2 per cent. of dirt, seeds and grain other than wheat; and

(*b*)—*For No. 1 Bombay Wheat* —

Not less than 85 per cent. of soft white club wheat.

Not more than 13 per cent. of soft red and hard wheat, and not more than 2 per cent. of dirt seeds and grain other than wheat.

They do not see their way to reduce the percentage of white wheat in the standard of "choice," more especially as contracts have been made on the basis of 94 per cent. of white wheat.

APPENDIX B.

Abstract of a series of notes interchanged in 1886 between two gentlemen interested in the trade.

Causes of impurities and remedies.

"A"—Shipment of pure wheat depends on the Associations at home. They fix the standard on first samples of the season, and any cleaner parcels sent subsequently sell at a loss.

Cleaning depôts are impracticable on the score of expense and for various other reasons. Cleaning down to 2 % can easily be done with native appliances.

Introduction of improved seed is not required, but mixed wheat and barley sowings should be discouraged, as barley can only be separated by expensive machinery.

Calcutta shippers make their profit on the refraction, and have fixed 5 % refraction in their own interest. The Calcutta Chamber's contention that it is cheaper to ship dirty wheat than clean is unreasonable.

Export business cannot be carried on direct by up-country dealers in present state of trade arrangements.

"B"—Agrees that cleaning depôts would be too expensive and difficult, and that buyers at home must take the initiative in lowering refraction, but doubts whether it would be wise for shippers to press for it at present.

Denies that profits are made by shippers out of the refraction; they more commonly lose on the deduction made at home.

However unreasonable it may appear, shipment of dirty wheat suits present conditions. Linseed is shipped refracting 30 %, yet the trade

has gone on and improved. When the miller finds it cheaper to get clean wheat than to clean it himself, the trade will right itself without Government interference. At present millers make no demand for cleaner wheat.

Government should improve railway arrangements.

"A"—Linseed cannot be cleaned below 3 and 5%, and the bulk of the trade (which is small in comparison with wheat) is done on this standard. Wheat can be easily cleaned to 1 or 2%; and to clean it would reduce the cost of wheat landed in the English market.

Had proof [apparently the voluntary admission of some Calcutta shippers] some years ago of profits made by Calcutta buyers by charging up-country dealers with excess refraction on wheat which passed in London as below guarantee. All up-country dealers complain that the Calcutta shippers do not deal fairly in the matter of refraction, and that much bribery and corruption goes on among subordinates in adjudging the quality of consignments.

Up-country dealers advocate a reversion to the old rule of the East Indian Railway limiting special class rates to large consignments; so that the consignments might be concentrated at trade centres before despatch to the port. The present arrangements extending low rates to small consignments has scattered the trade and made it difficult of supervision, although reducing cost of carriage.

An independent body of judges for wheat and seeds is much needed at Calcutta. The Calcutta Wheat Association have not the confidence of up-country dealers.

"B"—The statement as to the linseed trade is inaccurate. The bulk of the shipments to Liverpool are now on a 30% basis. American shipments have risen from a 3% to a 4% or 5% basis. London buyers contract on a 4% basis, and will not give credit for anything under, though they used to at one time. Formerly the bulk of the seed sold on a 4, 2 and 2½% basis, and this might be done again if buyers were agreeable; but they are not, and the case is a good illustration of buyers preferring a dirty article. Last year shippers refused a new contract because the crushers refused to buy on a basis of purity. The seed trade is of more importance than wheat to Calcutta, and has prospered in spite of the refraction system.

In the case of wheat, "experience has shown that the bulk of this produce available for shipment cannot be procured under 5% refraction. In April and May the refraction of the greater portion of wheat received is about 4%, in June and July 5 and 6%, and from August onward from 6 to 9%." Deliberate adulteration does not exist to any extent. The refraction found in wheat consists of—*1st*, dirt; *2nd*, peas, gram, barley, straw, &c.; *3rd*, shrivelled grains; and (after July) *4th*, weevilled grains. After 1st August shippers have to buy at 6% on account of weevils, because sellers (in India) insist on it.* No good can result at present from lowering the rate of refraction; it would only lead to increased wrangling, and dealers cannot afford to use expensive cleaning machines, while millers in England have devised machinery for handling it properly. Any freight saved on dirt

* "Roughly speaking, from the beginning of the season to end of May refraction consists of ⅓rd dirt, ⅓rd shrivelled and dead wheat, and ⅓rd other grains."

would be more than swallowed up by cost of cleaning, so that argument is as broad as it is long.

Up-country dealers have nothing to do with the loss or gain in connection with refraction of Calcutta shippers in their dealing with home buyers. They contract with the shippers on a 5% basis and up to 7%; if the consignment be over that, it may be refused. Shippers deal with consignments from all parts of the country; and in some cases make, and in others lose, on the refraction at home; but that is no concern of the up-country seller. Any firm depending on refraction for its profit would soon fail.

Dishonesty at Howrah is admitted, but it is the shippers whose sircars are bribed, who suffer. The allegation that shippers instruct their agents to get an unfair advantage of sellers when the market is adverse is not accurate; and the remarks regarding the Calcutta Association are unjust. Formerly, when there was a dispute as to quality, the seller not infrequently bribed a broker to adjudicate in his favour by a promise of employment; and it was to prevent this that the present practice of arbitration was adopted. Buyer and seller both draw a sample from the consignment in dispute and forward it to the Secretary to the Wheat Association, who appoints the arbitrators and communicates their decision. Neither buyer nor seller knows who the arbitrators are and *vice versâ*.

"Jalpani" and "Mugi," which an up-country dealer was, according to "A's" statement, charged at the rate of ₹5 per 100 tons, appears to be a kind of "dasturi" paid to Calcutta shippers or their agents.

The want of proper accommodation on the Bengal and North Western Railway is much felt. Every consignment which came down during the rains was more or less damaged. Finally, if Government can get cultivators to produce their wheat free from admixture of other grains, the speedy reduction of the standard of refraction is predicted.

"A"—Special machinery may be able to clean linseed down to 2%; but more than 3% for bold and 4% for small cannot be done with appliances available up-country. Bombay shippers credit up-country dealers with refraction below guarantee, and it is as much due to the fairer system on which business is done there as to its natural advantages that increasing quantities of linseed are going to Bombay.

It is true that the bulk of the grain sent into the market by the cultivator and *bania* contains 5% admixture; but this is not due to defective appliances, but done deliberately to suit the refraction system. Barley cannot be sifted out in this country, but other seeds can at any large up-country mart at a cost of 6 pies per maund. At Cawnpore some time ago thousands of tons of linseed received with 6 and 8% were cleaned down to 3% and 4%; and it is much easier to clean wheat (peas and barley excepted).

There is no reason why a 2% refraction for wheat should cause more disputes than 5%.

Up-country dealers insisted on a 6% refraction during the weevil season, as they were not going to stand the loss on that account, and it would not pay to clean large quantities simply to remove 1%; but dealers would be ready to clean down to 2% if buyers were prepared to give a better price.

Cases have occurred where the Calcutta test has shown the percentage of impurities to be greater than the test applied in London, and the Calcutta shipper has made an unfair profit. If native sircars are unreliable, European assistants should be employed at Howrah. The English import firms are understood to be connected with the Indian export houses; and it is in their power, if it were their interest, to demand cleaner wheat. Comparatively pure wheat would and could be supplied at a cost over present rates not exceeding half an anna per maund for the labour employed in cleaning the grain and the value of the loss in weight caused by the removal of impurities.

The bad arrangements on the Bengal and North-Western Railway are notorious, but the Calcutta Chamber should represent the matter to the London Board of the Company.

INDIAN WHEAT TRADE.

PART II.

PROCEEDINGS OF THE CONFERENCE ON INDIAN WHEAT IMPURITIES HELD AT THE INDIA OFFICE, LONDON, ON 8TH MAY 1889 AND PAPERS CONNECTED THEREWITH.

1

VISCOUNT CROSS, G.C.B., Secretary of State for India, *in the Chair.*

Constitution of meeting.

PRESENT:

Members of the Council of the Secretary of State.

Sir O. T. Burne, K.C.S.I., C.I.E.
Sir Alfred C. Lyall, K.C.B., K C.I.E.
General R. Strachey, C.S.I., F.R.S.
Sir John Strachey, G.C.S.I., C.I.E.
Sir James B. Peile, K.C.S.I.
Sir Charles A. Turner, K.C.I.E.

Private Secretaries to Secretary of State.

Mr. W. J. Maitland, C.I.E., and Mr. A. W. Williams Wynn.

Departmental Officials.

Sir Charles E. Bernard, K.C.S.I. (Secretary, Revenue and Statistics Department).
Sir Juland Danvers, K C.S.I. (Secretary, Public Works and Railway Department).
Colonel Sir Edward R. C. Bradford, K.C.S.I. (Secretary, Political Department).
Mr. C. Lennox Peel, C.B. (Privy Council Office).
Mr. A. N. Wollaston, C.I.E. (Assistant Secretary, Revenue and Statistics Department).
Mr. W. N. Sturt.
Sir George Birdwood, K.C.I.E., C.S.I. (Special Assistant, Revenue and Statistics Department).
Mr. J. R. Royle, C.I.E.
Mr. B. J. Rose (Technical Assistant, Revenue and Statistics Department).

Delegates and Representatives.

LONDON.

John M'Dougall, Esq., C.C.
M. B. Manuel, Esq., (Messrs. Ralli Bros.)
H. T. Strawson, Esq. (Messrs. Strawson & Co.).
J. Ross, Esq. (Messrs. Begbies, Ross, and Gibson).
Messrs. Tod and Durant.
J. Mercer, Esq. (Messrs. Mercer & Co.).
J. E. Beerbohm, Esq. (Evening Corn Trade List).

London Corn Trade Association:—
Seth Taylor, Esq. (President).
W. Vale-King, Esq. (Messrs. W. Vale-King & Co.).
R J. Duck, Esq.
P. T. Nicholas, Esq. (Messrs. Kelly & Co.).
E. J. Saltmarsh, Esq. (Messrs. Usborne and Sons).
J. H. Todd, Esq.

LIVERPOOL.

R. T. Smyth, Esq. (Messrs. R. T. Smyth & Co.).

G. T. Turner, Esq. (Grain Trade Review).
Kains Jackson, Esq.

London Chamber of Commerce :—
J. Harrison Carter, Esq.

Liverpool Corn Trade Association :—
C. J. Procter, Esq. (President).
S. Sanday, Esq. (Messrs. Sanday & Co.).
H. C. Woodward, Esq. (Messrs. H. C. Woodward & Co.).

HULL.

Hull Chamber of Commerce :—
E. P. Maxsted, Esq. (Messrs. Keighley, Maxsted & Co.).
F. B. Grotrian, Esq., M.P.

BRISTOL.

Arthur Baker, Esq. (Messrs. W. Baker & Sons).

Bristol Chamber of Commerce :—
A. R. Grace, Esq.
John Weston, Esq.

Liverpool Chamber of Commerce :—
H. Coke, Esq. (President).
R. P. Nixon, Esq.
J. H. Hubback, Esq. (Messrs. Segar and Tunnicliffe).

CARDIFF.

Cardiff Chamber of Commerce :—
James Tucker, Esq.
Robert Strong, Esq.

CORK.

Robert Hall, Esq. (Messrs. R. and H. Hall, Limited).

National Association of British and Irish Millers.

Samuel Smith, Esq. (Sheffield).
R. H. Appleton, Esq. (Stockton-on-Tees).
Wilson Marriage, Esq. (Colchester).
W. E. Willson, Esq. (Birmingham).
J. H. Chatterton, Esq. (Secretary).

H. D. Marshall, Esq. (Messrs. Marshall, Sons, & Co., Gainsborough).

2

PROCEEDINGS OF THE CONFERENCE.

Viscount Cross' address.

In opening the proceedings, Viscount Cross, G.C.B. (the Chairman), said :—

Gentlemen, I am extremely obliged to you for coming here to-day upon this matter, which, I think, is of very considerable importance; and I have to thank you for the trouble you have taken in answering the request of the invitation which I took upon myself to send to you. I need hardly say that, as Secretary of State for India, I have every reason to be deeply interested in the export of Indian wheat; and I do not think that the facts of the amount of export are really known. Therefore, I had better read the figures that I have before me, which do not refer to the last year; and I purposely do not include the last, because that happened to be a bad harvest in India, and it would rather upset the calculations. But you will remember that before the *ad valorem* duty of 7 per cent. was taken off in 1873 the export of Indian wheat only amounted from British India to 17,000 tons, taking the average of the four years before the famine; and, after the duty was taken off, that 17,000 tons increased, on an average, to 137,000 tons,

which was a very large increase. If you leave over the famine year and take the four years from 1883 to 1887, you will find the average of the exports during those years amounted to not less than a million of tons. In 1887-88, when the food harvest was short, that figure dropped to 677,000 tons. Now, if the harvests are good, and the railway communication with India is still further opened and improved, as I trust it will be, we may expect the exports of Indian wheat very largely to increase, to the great benefit of the inhabitants of this country, and, I think, also to the benefit of the people of India. The value of wheat in 1887 comes to £86,259,860.

Now, when we consider that the wheat area of British India comes to about 20,000,000 of acres, and that the Native States have something like 9,000,000, or a total of 29,000,000 acres of wheat growing at the present moment, it is quite clear that this is a trade of enormous value, and it ought to be one of enormous profit.

If we compare the imports into the United Kingdom from the different countries, I find from the figures which I have before me that we have an average of the years 1885-86. From the United States there were 1,946,000 tons; from India 580,000 tons; from Russia 395,000 tons; from Canada 153,000 tons; from Germany 152,000 tons; and from Australia 134,000 tons.

I am quite aware that, owing to the state of the harvest in Russia and that of the harvest in India last year, the figures between India and Russia have been very much altered in favour of Russia and to the detriment of India. I will pass that by.

Now to the object of our meeting. It seems to me that it would be for the benefit of the consumer, and certainly of the grower, and also I should have thought of the exporter as well as the importer, that all wheat that came into this country should be as clean as it could possibly be. We find, however, that this is by no means the case, and one very notable feature in the wheat received from India is that the wheat which arrives in the earlier months of the year is a good deal cleaner than that which comes in the three winter months, which is very much more dirty. You have all seen those tables which I have had prepared, and you will find there that the percentage of dirt in some of the wheat that comes from India amounts to 7, 8 and 10 per cent. Of course those are special cases, but still there is an enormous amount of dirt which ought not to be there. In fact, we may say that at the present moment we are going to the useless expense and the folly of paying for importing about 3,000,000 hundredweights of dirt every year from India. That is not a very business-like proceeding. I have had it calculated that that is equal to an export duty or tax of something like one and a quarter per cent. That is not a business-like proceeding, if it can be avoided.

Now, the question is, what remedy can be applied to this state of things? I dare say you have all had the advantage of seeing that selection of samples in the next room, and for that collection we are indebted to Mr. M'Dougall, who has taken a great deal of trouble in this matter. I look upon these samples as being most interesting and most instructive. Looking to the cause why the wheat should come in this state to England, I am afraid that I must say that a good deal of it is due to the

form of contract under which the wheat is sold. You all know what I mean by the words f. a. q., fair average quality. That is rather an elastic term, and I cannot help thinking that if a different contract was made that we should get rid of a good deal of dirt that, unfortunately, comes into the country at the present moment One effect of this form of contract, as I am informed, is this,—that if any one takes the trouble to export from India into this country clean wheat he does not get the value of the clean wheat because he sells it f. a. q.; and it is very difficult to make a special contract for a special cargo when the wheat is sold in a different manner.

I have seen that the Chamber of Commerce of Cardiff has made some observations upon this point which I think are worth attending to. The Cardiff Chamber of Commerce expresses the conviction that "the present fair average quality form is a direct incentive to ship impurities, and that the only solution of the difficulty is a permanent percentage standard which the quantities of extraneous matter must not exceed." I understand that the Liverpool Chamber of Commerce has already adopted a different way of selling wheat, that there should not be over 2 per cent. of dirt, which seems to me to be a very much more sensible state of things. This is the response of the Liverpool Association, which I will quote from a letter of Mr. Forbes Adam, who is at Bombay. It says, "The response of the Liverpool Association was, I am happy to say, more satisfactory. It arrived only a few weeks ago, and is dated 12th July. It said that the members were desirous of meeting the views of the Bombay Chamber, and had decided to alter the standards of wheat on which sales were made, and that these standards would in future contain only 2 per cent. of dirt, seeds, and grain other than wheat."

Well, I hope that we may have the advantage of some advice from the members of the trade whom I am glad to see assembled here to-day.

I would refer to the question of rice, which comes here free from all admixture except its own husks; and also to the matter of linseed, which some years ago arrived mixed with a large percentage of dirt; but a new contract form limiting all admixture to 4 per cent. was adopted, and now linseed is said to arrive in a clean condition. That is a hopeful thing, and an example which we can follow. I would also allude to the fact that from enquiries I have made I find that Italy and France refuse to import wheat which is not infinitely more clean than that which comes to this country. I do not see why we should not follow their example. I will not detain you any longer; I simply asked you here to get your advice and assistance with reference to Indian wheat imported into this country, which should not be allowed to come in its present dirty state, so that every one may get the advantage—the grower, the exporter, the importer, and the consumer.

I shall now be very glad to hear any remarks with which you gentlemen may favour us.

Mr. W. Vale-King.—My Lord and gentlemen, we have read all your reports and papers with a great deal of interest, and the London Corn Trade Association have held many meetings to consider those reports and papers, and after a good deal of discussion they decided that the best way would be to have a sort of reply printed, which I handed in just now, and which Mr. Todd has very kindly offered to read.

The Chairman.—Will you be good enough to read it?

Mr. Todd.—It is rather a long document, and it was only put into print this morning.

(*Mr. Todd then read the following documents.*)*

Views of the London Corn Trade Association.

"At a meeting of the East Indian Wheat Committee of the London Corn Trade Association, held on the 7th May 1889, it was resolved that the following statement relating to the question of impurities in Indian wheat should be adopted as a reply to the reports and papers sent out by the India Office.

"1st. In Sir C. E. Bernard's memorandum, and throughout the correspondence with Government, whether in India or at home, Indian wheats are described as containing 5 per cent of *dirt;* and the expression of 5 per cent. *dirt* is so often, and so indiscriminately, used that it conveys to the mind an erroneous and altogether an unjust idea of Indian wheat.

"If we refer to the analysis by Mr. J. M'Dougall of the impurities in Indian wheats, in *no case* do we find a sample *with 5 per cent. of dirt;* and, even if we add to it the 'dust,' which we suppose is composed of flour dust of weevils, we fail to get a percentage of 5 per cent. of dirt and dust together, except in one or two cases of Calcutta wheats only. This admixture of dirt and dust, in the majority of cases, seldom reaches 2 per cent.

"2nd. In the same report of Sir C. Bernard's, the admixture of grain, seeds, and earth in Indian wheat is clearly shown to be the result of the mode of cultivation and threshing, and if to these we add that the weevil is an inherent defect in all Indian wheats, owing to climatic influences, we can easily account for the comparatively heavier admixture in Indian wheats as compared with that grown in countries where a higher standard of cultivation is adopted, without attributing this state of things chiefly to malpractices, and on that account invoking Government interference and the enactment of a Wheat Fraud Act, as is suggested in some of the reports and papers submitted.

"That the natives do add foreign matter to their wheats to cheapen the cost is possible, and even probable; but between this and a systematic adulteration of their wheats there is a vast difference, and the enactment of a Wheat Fraud Act, like the defunct Cotton Fraud Act, apart from its being questionable whether, on general principles, trade should be interfered with by Government Acts, could only be suggested by want of knowledge of the conditions of trade, agriculture, and general manipulation of produce in India.

"3rd. It is suggested, in the reports and papers under consideration, that the fact of the shippers contracting for wheat with an admixture of foreign matter of 5 per cent. in Calcutta, and 4 per cent. in Bombay, and refusing to pay a higher price for cleaner wheats, prevents any improvement in that direction. This is correct as far as it goes. At the same time, seeing the way in which wheat is grown and manipulated in India, as set forth in Sir C. Bernard's report, we must come to the

* For copy of protest of the National Association of Millers against the above, see Appendix G, page 53.

conclusion that shippers have accepted the above basis because they thought it was warranted by the normal condition of wheat as grown, which contained such an admixture. Merchants must be credited with knowing their business too well to suppose that they have fixed upon such a basis in a fanciful way, or in order to allow natives to adulterate their wheat.

"It is suggested by Sir C. E. Bernard and Mr. Forbes Adam that the business in wheat, *i.e., the buying in India*, should be conducted on a basis of 2 per cent. of admixture; and by Mr. M'Dougall that *a Syndicate should be formed* to purchase and *export clean Indian wheats*, which latter we take to mean about the same thing, *viz.*, the reduction of the present basis of 4 per cent. admixture in Bombay, and 5 per cent. in Calcutta, to 2 per cent.

"As the natural condition of Indian wheats is to contain about 5 per cent. of admixture of foreign matter on the Calcutta, and 4 per cent. on the Bombay side, the reduction of the basis to 2 per cent. of admixture will resolve itself either, first, into a discount of 3 per cent. and 2 per cent. respectively in the price agreed upon in taking delivery of the wheat from the natives, and shipping it in its natural state; or, secondly, it would necessitate cleaning the wheat down to 2 per cent. either by the sellers before delivery or by the shippers before shipment, thereby enhancing the cost, through loss in weight and extra cleaning expenses, by about 10½*d.* to 1*s.* per quarter on a price of about 34*s.*

"Notwithstanding, however, the replies of the English millers, as given in pages 34 to 40 of the papers under consideration, experience has proved that buyers in this country are not prepared to pay the above premium, and when the offer is made to them of a lot of wheat at, say, 34*s.*, f. a. q., or 34*s.* 10½*d.* in a cleaner state, the sale is invariably concluded on the f. a. q. basis.

"4th. When the question was first agitated, an Indian firm prepared and showed in the market a superior sample of No. 1 Club Bombay wheat, which they offered to sell, on a guarantee of its containing 94 per cent. of soft white wheat, not more than 4 per cent. red wheat, and the admixture of foreign matter *not* to exceed 2 per cent., at a premium of 9*d.* per quarter, and at times they have even offered it at only 6*d.* above f. a. q., but, with the exception of two cargoes sold for Ireland, they have never succeeded in selling more. Other shippers can speak of similar experiences, which would tend to prove that the impression of the trade is well founded, *viz.*, that buyers will give the preference to clean wheats, but will pay little or no premium for them.

"Whilst on this point, we may remark that the questions put to millers were of too vague and general a character to elicit replies much to the point. We venture to think that the replies to question No. 3 would have been rather different if after, '*Would you use larger quantities if free from admixture and impurities?*' it had been added, '*Would you, in such a case, pay a higher price in proportion to the lower admixture, and also to cover cleaning expenses?*'

"We have it from millers themselves that they can clean wheat cheaper than shippers would charge them for doing this work, and that, *however clean the wheat may be delivered to them, they still have to clean it over again.* Besides in buying f. a. q., they know about what

they have to expect, and, whilst they are protected by arbitration from any inferiority in cases where they may be tendered parcels inferior to f. a. q., they have also the chance (not an infrequent one by any means) of getting delivery of a superior parcel without paying anything extra for it.

"It is also suggested, as a means of securing greater cleanliness in Indian wheats,—

"That wheat might be sold at home on analysis like seeds (Mr. Finucane's report). That the Corn Trade Associations might be asked to fix the refraction on all sale contracts of wheat at not over 2 per cent. (Mr. Forbes Adam's letter to His Excellency the Governor of Bombay).

"This question of selling wheat on a percentage rate of refraction has on various occasions occupied the attention of the Sub-Committee (Indian section) of the London Corn Trade Association, and has also been discussed by the General Committee of the London Corn Trade Association, but the principle so far has been considered impracticable.

"There is a great difference between selling seeds and wheat on analysis.

"1st. The quantity of any description of seeds sold is very considerably smaller than that of wheat.

"2nd. Seeds, specially linseed (by far the largest trade in seeds), show little variation in quality, and hence it is practicable in large parcels of linseed to have the analysis made on *one* average sample to determine the whole shipment. This, with the variations in quality, admixture, &c., &c., in wheat, almost from bag to bag, is *impossible*, and therefore it would be necessary for every small parcel of 50 tons or 100 tons to have separate average samples drawn, and have them analysed.

"3rd. In seeds, owing to the above slight variation in quality, a comparatively small sample is analysed; whilst in wheat a considerably larger sample will have to be analysed, and thus the cost will be greatly increased.

"The charge for analysing a sample of linseed is 5*s*., whereas on wheat we believe it has not yet been done under 2*l*. 2*s*., a very heavy charge on 50 tons or 100 tons of a poor article like wheat.

"4th. The quantity analysed being larger, it naturally will take much longer to analyse, and when in a large parcel of 2,000 to 2,500 tons of wheat something like 20 or 25 analyses will have to be made, it can easily be understood that delay must follow, rendering the final settlements protracted and unsatisfactory.

"5th. Lastly and chiefly, seeds are not liable to weevil. Wheat is, and sometimes it suffers *most severely* from this inherent defect. How would the advocates of analysis deal with the weevil flour dust? If they take it as refraction it would be very unjust to the shippers, who, although they may have cleaned down and shipped in India a parcel containing only 2 per cent. refraction, may be called upon, through the wheat being attacked by weevil during the voyage, to allow on final settlement 5 per cent, and even 6 per cent. or 7 per cent. on refraction, besides making an allowance for quality, in consequence of the excessive weeviled condition of the said parcel. If, on the other hand, weevil flour dust is admitted *not* to be an heterogeneous substance, how is it to be separated from the fine earth, sand, or other impurities?

"The selling, therefore, of wheat on the basis of percentage refraction is tedious, costly, and impracticable.

"One of the reasons of the present discussion is the desire to improve the condition of the Indian wheat trade; but whilst we believe that any sudden or violent change or Government interference would be injudicious and unadvisable under actual circumstances, we have every faith in the slower and more gradual but surer improvement which every trade works for itself; and we believe that if a comparison were made of the condition in which wheat is now shipped from Bombay and Kurrachee, and that of ten to fifteen years ago, a very satisfactory rate of improvement would be perceptible in the cleanliness, grading, and general manipulation of present shipments of wheat.

"We cannot say the same of Calcutta, but the reason in this latter case is not far to seek, the development of railways in India having diverted from Calcutta to Bombay some of the finest qualities grown in the North-West and other up-country centres, which produce the cleanest kinds of wheat.

"Another reason put forward is the desire to develop the resources of India, and make it a more important wheat exporting country than at present. This would have been a reasonable view if it were found that owing to the unclean condition of Indian wheats India is obliged to carry a large stock at the end of the cereal year, which stock increased year by year owing to want of inquiry from the consuming markets. This, fortunately, is not the case, as all shippers receive in about March—April from Calcutta and Bombay, and in May—June from Kurrachee, information to the effect that wheat of the old crop is exhausted, thereby proving that India is able to place all the wheat she has available for export year by year.

"Seeing, therefore, that the natural condition at present of Indian wheats is to contain about 4 per cent. of admixture on the Bombay side, and 5 per cent. on the Calcutta; that, under the circumstances, it is not practicable to induce the Indian shippers to change their system of purchasing, and, instead of buying on the above natural refractions, to introduce an artificial basis of a 2 per cent. refraction; that buyers *practically* are not prepared to pay a *proportionately* higher price for cleaner wheats; that the system of selling on analysis here is altogether impracticable and unadvisable; that the conditions of the Indian wheat trade, although slowly, are gradually improving; that India ships and sells all her wheat available for export year by year, and that her development, in this branch at least, is not prevented by the present condition of her wheats; that the interference of Government in questions of contract as between seller to buyer is inadvisable; our opinion is that it is not advisable or desirable to try and force sudden and radical changes in the natural condition of a trade, but that it is preferable to let the improvement come gradually out of the trade itself, taking it for granted that merchants, sellers and buyers, shippers and consumers, &c., are too keenly alive to their interests to allow any opportunity for improvement in their trade, when such becomes advisable, to pass by.

"W. VALE-KING,
"*Chairman.*"

Mr. H. C. Woodward (Liverpool Corn Trade Association).—My Lord, in addressing to you a few words on this subject, I am sorry to have to admit that there is a cleavage of opinion on the point at issue between London and Liverpool. We have listened to this memorandum, but there is a strong divergence of view on certain points of it. We ourselves, as you are evidently aware from your remarks, advocate a fixed standard for Bombay wheat more especially, and also of other kinds of wheat shipped from India, with a view of popularizing and increasing their consumption, and generally to benefit the trade. We found that in competition with the London standard, which was simply on the average of a month's shipment, our own fixed standard did not work so easily, because it is obvious that a seller would commit himself to a comparatively easy task in shipping wheat as good or clean as his competitors under the London standard, while in the other case he would have to hold himself bound to fixed conditions of cleanliness and proportions of various kinds of wheat. Therefore, our own standard did not make very much headway. Whilst we see the advantage of London making up the standard as a convenient focus for collection of samples, still we felt that as in Liverpool we handled two-thirds of the Bombay wheat shipped to the United Kingdom, and four-fifths of the Kurrachee, our opinion ought to have some weight, and we ourselves see no difficulty, while London makes up the standard, in fixing as a refraction for the purposes of arbitration, that 2 per cent. shall be the maximum admixture of dirt and of seed other than wheat in all shipments of Bombay wheat. We believe that if you improved the quality here, it would very soon be raised to meet the case in Bombay; that if the native found that his shipper there contracted to sell here on a certain basis, he would have to fit his contract to the contract made here, and in a short time the shipments would materially improve. The refraction fixed for Calcutta shipments might have to be more than 2 per cent., especially for shipments made in the autumn after the monsoon; and in Kurrachee shipments a special allowance would have to be made for the admixture of barley which usually occurs in wheat shipped thence, but some definite maximum of impurities should be arranged for in all cases. We have found, more especially with regard to Calcutta, that later in the season the wheat comes in bad condition—what is known as "country damaged," and that ought to be met by the refusal to admit any parcels containing country damaged wheat into the London standards on any basis whatever. The basis of the standard ought to be sound wheat. It has rendered later shipments of Calcutta wheat, especially, extremely unpopular with our millers and buyers. As the Cardiff statement puts before you, "they don't know what they are going to get." If they buy for September or October shipment they find a much inferior article, and they are compelled to buy on the spot where they can select special parcels. We also think that the statement that buyers will not pay a better price for cleaner wheat is a somewhat exaggerated one, looking at the transactions on the spot. We quite admit for sales "to arrive," and a good deal is on that basis, it is not so easy to sell wheat on a special sample as it cannot be conveniently passed from hand to hand—and if you have a term like "No. 1 Bombay wheat," which is a recognized standard—it is easier to sell. But we Mr. Woodward.

maintain that there is a very large difference in the quality, and a very great many millers would give a preference to a clean wheat, and pay more for it. Our feeling is, that as you put it, my Lord, the f. a. q. is a very elastic term. We want to make f. a. q. a little tighter. The London Corn Trade Association in their memorandum on behalf of the shippers complain that they cannot get any higher price for parcels of clean wheat; we desire to frame such a contract as will provide that they shall at all events get rather a lower price for very dirty wheat. As the percentage of dirt will be less it will require rather more care in shipping, but in the interest of the miller, and in the long run the interests of the miller and of the merchant who handles the wheat are identical, the thing would be more satisfactory. We think that the objections to the raising of the standard on the part of the London Association are not well founded, and we think that the raising of the standard is both feasible and practicable. We doubt whether interference of the Government might be made available in this case. The only point is, whether an Adulteration Act should be adopted on the same principle as a man is punished who sands his sugar, so a man who puts soil into his wheat should also be punished. But we doubt the wisdom of that from a commercial point of view. That is, however, more your province than ours, but we think that the raising of the standard will improve and consolidate the business.

Mr. Coke. *Mr. H. Coke* (President of the Liverpool Chamber of Commerce).—Mr. Woodward has said many things of the Liverpool trade which I would have said, and which I need not now repeat. With reference to this interesting document which has been read, it contains much that we can agree to, especially the last clause, which recommends that the trade should be allowed to settle this matter for itself. I am able from my personal experience to give the corn trade as assembled here, represented by the millers, the brokers, and importers of Liverpool, and the brokers and importers of London, a very important example of the same difficulty in the matter of cotton. Your Lordship will remember that, during the American war, Lancashire urged the Secretary of State to do everything that could possibly be done to make India supply clean cotton for the mills of Lancashire in the event of any such calamity occurring again as the American war; the first point that was brought to the notice of the Government was, that it was necessary for the Government to interfere, and insist upon the cotton being properly cleaned and properly shipped; so great pressure was brought to bear upon the Government at that time in the interest of the spinning trade of this country that your Lordship will remember a Cotton Frauds Act was passed. It gave rise to a great deal of irritation. All the reasons which may now be advanced why the Government should not interfere in the matter of adulteration of wheat were also urged at that time with regard to cotton, and eventually the Government repealed the Act. But what happened immediately after the Act was repealed? The trade took up the matter, saying, "We must protect ourselves from this fraudulent mixture, and from this shipment of dirty cotton." The principal cause of the shipment of dirty cotton at that time was the form of the contract. The only basis upon which people would buy in this country was that of "fair." There was a standard of "good fair,"

another of "good," very seldom did you get a standard of "fine;" but, at any rate, "fair quality" was taken as a basis for all contracts. That "fair quality" was a very inferior quality.

As I have said before, there were three grades known to the trade, but the only way in which we could make contracts for arrival business was on the basis of "fair," so that if you shipped cotton to Liverpool a halfpenny or a penny per pound better, it had to be delivered on the basis of "fair," and the seller got no allowance for it. The consequence was that if a merchant shipped to this country large quantities of good cotton, he could not sell it to arrive except at a great sacrifice. The better cotton had to be held, as the same class of wheat is now held, to sell on its own merits, and the trade lost the benefit of the arrival business. Wheat is now in exactly the same case. The importer who has encouraged his constituents to ship the best wheat loses the advantages of selling "to arrive," because, if he sells it, the contract must be on the "fair average quality," which is the basis of the trade. A very large quantity of our own wheat comes to Liverpool, and is sold on the spot at the price of Californian wheat, which is very nearly the best in the market; we cannot trade in wheat "to arrive" because the basis of trade is "fair average quality." This basis offers exactly the same premium on shipping poor wheat that the basis of "fair" offered on the shipment of bad cotton. What happened? The merchants, represented by an old Association called the India and China Trade Association, discussed this very point which we are discussing now, and agreed that the basis of the contract was wrong, but we could not get the trade to agree to any change in the form of contract. In fact, we were in much the same position as we are now in with the Corn Trade Association of London. However, a time came when the cotton crop turned out exceedingly bad, and sellers were "slated," by very large allowances. Exporters of cotton then came together and said, "We will have no more of this; we will bind ourselves to sell on no other terms but mutual allowances." What then happened? The speculators in the article could never fulfil their contracts, because there was no exporter to sell on the old terms, and they were obliged to come to the new form of contract. It is quite forgotten that we ever lived under such a barbarous system. The standard of arrival business, my Lord, is now raised, not to "good fair," which is the one above "fair," but to "good." The greatest quantity of cotton is now shipped on the "good" standard, and the quality is immensely improved, to the great benefit of everybody concerned in the trade. By some similar change in the form of the wheat contract we think that the same result would be obtained as regards the quality of that article. We perfectly understand that there is no intention on the part of the Government to hold over us a Wheat Fraud Act.

The Chairman.—No.

Mr. Coke.—If the gentlemen who drafted this document had had the experience which we had in cotton they would not advocate the maintenance of the present contract for wheat. Having been brought face to face in this matter, I think the corn trade of Liverpool and the corn trade of London will come together and continue to hammer at this business until it is satisfactorily settled.

Mr. Hubback. *Mr. J. H. Hubback* (Liverpool Chamber of Commerce).—I have to speak to-day both as an importer of wheat into Liverpool to a large extent, and also as representing one of the largest local mills; I am a member of the Board of Directors of the North Shore Mills, and have the authority of the Board to speak for them on this matter.

We use about 1,500 tons of wheat in the week, say, 70,000 tons in the year. The quantity of Indian wheat which we use at present is from eight to ten thousand tons in an average season. There can be no doubt whatever (I have made careful inquiry from the mill manager on this point) that this quantity could easily be doubled if we were sure that in buying f. a. q. "we knew about what we have to expect." I am quoting from the London East India Wheat Committee's reply to the India Office, just read.

The point is really that, after the month of August, or at any rate September, we do *not* know what we have to expect, and I think it is shown by the tables with which you have supplied us, relative to the admixtures in Bombay wheat, that, from an average of 2 per cent. in the months of August and September, the average goes down suddenly to 4 per cent., or rather over 4 per cent. in November. It is just this uncertainty which prevents millers, both the North Shore Mill and others whose opinion I am also expressing, from buying Bombay wheat "to arrive" after August or September.

I would put it to the sellers of Bombay wheat whether they are not shutting themselves up to deal only with speculators. Speculators are, no doubt, a very desirable class of people, but they are only one set of buyers, while shippers could secure two sets—millers and speculators—if they cleaned their wheat more carefully. Further, I would say that I do not see any reason why good Bombay wheat, not only the choice, should not fetch approximately the price of Californian wheat, taking one season with another, if properly cleaned, and free, not only from earth, but from stones, which are also a great drawback. I may say here that I think there is one omission which has not been touched upon; I believe the Liverpool form of contract is not mentioned in the London reply, nor even in the India Office reports.* A great many of the questions dwelt upon in the London reply are settled by the Liverpool contract; for instance, the Bombay shippers know very well that when they sell on the Liverpool contract they undertake to deliver the wheat in fair merchantable condition, and that engagement is very largely made by the shippers having houses in London as well as in Liverpool. Under these circumstances the weevil dust, and so on, is a seller's consideration. When the London East India Wheat Committee speak of "lastly and chiefly" they must be aware that the question of the wheat being attacked by weevil is dealt with under the conditions of the Liverpool contract, and that those conditions are largely accepted.

I must unhesitatingly advocate 2 per cent. refraction as being a fair basis of settlement. I think that all we want to do is to raise the basis; the basis is fixed in London, and on London standard, and if the basis is raised the whole question is settled.

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* For copy of the Liverpool Corn Trade Association, East India Shipment and Delivery Contract Form and other papers, &c., see Appendix A, in Appendices to Part II.

The Chairman.—I understand that Mr. Manuel (of Ralli Brothers) cannot stay very long, and I therefore now call upon him.

Mr. M. B. Manuel.—My Lord, I have listened to the remarks made by the gentlemen of the Corn Trade Association, and I have also listened to the gentleman from Liverpool, who remarked, amongst other things, that if those people who penned the report of the Corn Trade Association had had any knowledge of cotton they would not have penned it. I happened to have been in Bombay at that time representing the firm with the largest interest in cotton, and although I may not agree with what the Liverpool gentleman has said, I think that he has proved the case of the London Corn Trade Association, which simply says, "Our opinion is that it is not advisable, or desirable, to try and force sudden or radical changes in the natural condition of a trade, but that it is preferable to let the improvement come gradually out of the trade itself." I think that it has been proved that the improvement in the cotton trade has come out of the trade itself. Mr. Manuel.

The Chairman.—I hope that it was never understood that we intended to press legislation, or to enforce it upon the trade. My wish is to see what can be done in the trade amongst themselves.

Mr. Manuel.—There is a great desire that Indian wheat should come cleaner into this country, and that is the desire of everybody. If the gentlemen who deal in wheats want cleaner wheats, they can have them. What we say is that we ought to have the question widely canvassed and faced from all points. We find that, practically, when cleaner wheats are offered, they do not get the value, and if the trade is prepared to pay, as it has done in the cotton trade, they will get it finer—if they agree to pay more for it. Ralli Brothers constantly offer fine wheats, but we can never sell them.

Mr. Coke.—Mr. Manuel must have misunderstood what I said. His idea as to how the matter should be settled seems to agree exactly with the course that I recommended. I thanked your Lordship for bringing the trade together, and I added that when we had discussed it fairly in all its bearings we should get it satisfactorily settled.

Mr. John M'Dougall.—My Lord, I am disinterested in this matter. I neither buy wheat nor sell wheat, and I simply analysed the wheat on your behalf. But I should say that the recommendations that I put at the end of the Report were simply my own ideas in the matter. I was requested by you, my Lord, to suggest any means that could be used for causing clean wheat to be brought here, and I suggested three courses,—one was the mutual arrangement between the trade that they should agree to a basis, and I suggested 2 per cent.; that there should be others who should buy clean wheat as a Syndicate, if that was desirable, or that dirty wheat should not be allowed to come here. From the analysing of these samples, I should like to call your attention to one or two points which somewhat tend to show that it is not simply a matter of what the native arrangements are, the harvest must be taken at one time, and therefore the quality for the season would be as the harvest was, but I find that the later shipments are altogether different in quality from the earlier shipments in the matter of dirt. I find that as to the quality of wheat, if a white sample is sold with a proportion of red, the proportion of red is very largely increased in the later shipments, Mr M'Dougall.

and in many cases it is almost doubled. The proportion in the first months up to March was 21 per cent. and in July it was 40 per cent.; so that red grains have increased 19 per cent. in a very few months; but I do not find that when a red sample with white is sold, that the white berry, which is of greater value, is increased in the later shipments. I say there is no reason why this state of affairs should not be altered. The gentleman who has just sat down has said that if there is a demand for clean wheat the clean wheat will be sent. The gentlemen from Liverpool and London who are intimate with the trade know that there are two ways of dealing with wheat, one is the f. a. q., wheat to arrive, where I can quite see that there is a very great deal of difficulty in selling a special sample, because wheat bought forward is, as a rule, bought for cover, and it is desirable that the sale should be immediately completed as soon as the seller wishes to take his cover to avoid a loss. But if a wheat is put upon the stand with 1 per cent. or 2 per cent. of different percentage of admixture it makes all the difference. A miller puts his hand in the bag and criticises its value to 3*d.*, and will give the increased value without the slightest doubt upon the increased quality or cleanliness. But if it is buying the special sample on the c. i. f. terms, so that the sample has to be passed and the buyer knows that he may have to sell by wire, and that the sample would have to be sent with it, there is therefore a great difficulty. In the matter of quality, the miller knows what is just the price, and nothing more or less, and he calculates his dirt; but in the c. i. f. parcel it is necessary that he should buy whatever quality is going, and therefore he does not buy the odd sample. From the present position of matters, how can the trade improve unless some action is taken to alter the terms of the contract I do not know, because if the fair average quality principle is to prevail there never will come a time when the matter can improve. It is to the disadvantage of the importer that he should ship for one season gradually improved qualities, because he has to deliver to his sellers without an increase in price, so that unless terms of the contract are altered, I do not see how the gradual improvement is to come.

Mr. Maxsted.

Mr. E. P. Maxsted (Hull Chamber of Commerce).—My Lord, I rather lost the point of the gentleman here on the right, Mr. Manuel. "If you bring the proper quality of wheat to the market you will get your price for it." It has been my experience, and a very long experience, that those admixtures are simply made in order that the shipper may reduce the wheat which he receives from the natives down to f. a. q. point; that is, we have found in Egypt, and in the Black Sea, and in other places, years and years ago, that dirt was actually put in cargoes in order to have them passed as fair average quality before the Associations existed of having it defined as to what the percentage should be. Mr. Manuel has stated his side of the matter.

I remember, some 30 or 40 years ago, his principal, Mr. Ralli, coming down to Hull and advocating the question that linseed should be sold with a guaranteed admixture, and that has been adopted, and has worked exceedingly well ever since that time for the whole trade. I think that the millers who are here present, and who will tell you very much better than I can, that they would advocate cleansing the wheat

freight, as well as deterioration of the quality caused by admixture of dirt and other substances; and thus the trade would be carried on very much more smoothly than it is at present. We all know that when a parcel of wheat arrives and is fuller of dirt than the buyer expected, and specially if the market has gone against him, that there is a great deal of trouble to get it passed. If the basis of 2 per cent. were adopted it would be fair both to the buyer and to the seller. There is no necessity to have such a large difference as 4 per cent. in wheat, and I think that my friends, the millers, will bear me out in that. There is no reason, except in a very few districts in India where they thresh out on the ground, why there should be such a large percentage; and I, on behalf of Hull—and we import no small quantity of grain from India—will go heartily with the Liverpool people in trying to get the basis raised to 2 per cent.

Mr. Seth Taylor.

Mr. Seth Taylor (President of London Corn Trade Association).—My Lord, I am quite sure that we appreciate the fact of your calling us together, not only in the interest of ourselves but also in the wish that you have to improve the growth of wheat in India. We accept your disclaimer that you are not going to dictate between the buyer and seller, which, I think, would be beyond the scope of our legislature, whatever may be done in other countries, but I think that the limit to which the Government might interfere with advantage would be the prevention of wilful admixture of foreign substances in wheat in India. We must discriminate between what is naturally grown and is necessarily harvested with the wheat, and the system of mixing dirt with the wheat to bring it down to a standard below that which should come here. That, of course, one feels is a practice which might very fairly be made a penal offence. But that rests with your Lordship and the Government. I am quite sure that it would be to the interest of every one if such an enactment could be passed. The difficulty there is in fixing a limit of 2 per cent. refraction is owing not only to dirt, but to the seeds of various kinds that are grown amongst the wheat. We have not only from India, but from other countries, foreign elements grown in the wheat, and to have a system of cleaning wheat at the port of shipment would add more to the cost of wheat than the buyer would give on the other side. However well it might be cleaned in India there would be still a necessity to clean it again on this side, and whether there were more or less dirt, we should still have to clean it here. Of course there are a number of smaller millers who have not the necessary machinery, and they would like to have wheat which they could more easily use; and, speaking for both the London and Liverpool Associations, we shall only be too glad to consider the suggestions your Lordship has made, and to introduce any clause we feel would be practicable into our contracts which would attain the end of improving the growth of wheat in India and of giving greater satisfaction to the buyers. The admixture of red wheat with white is not such a serious matter. That of course is merely a question of different value. If we get more red the value of the wheat is diminished in proportion. You referred to the different amounts of exports from India from time to time. There is no doubt that the growth of wheat has increased very largely in India, but the amount of exports for any particular year depends upon the goodness or badness of the crops.

From America we have had very little indeed this year, and you cannot tell from a particular year what the average growth may be. The gentleman from Liverpool, the President of the Chamber of Commerce, spoke of the analogy of cotton with wheat. They are analogous only to a certain extent, as the value of cotton and wheat is so very different. The question of mutual allowance which he suggested, would be too vexatious and too troublesome, as it would involve the analysis of everything that came, and would be beyond the reach of practical politics and practical business.

Mr. Coke.—I did not propose that.

Mr. Seth Taylor.—The degeneration of quality was spoken to by Mr. M'Dougall. Well, the good wheat comes first, and as you get to the bottom of the pits, and as the stocks get shorter as the season advances, the inferior qualities get sent off. There is a certain allowance for this even from the best exporting countries, and we cannot avoid it altogether.

Mr. Willson. *Mr. W. E. Willson* (Birmingham).—My Lord, I come from Birmingham, and have the honour of representing a large number of millers in the Midland counties, and I have to say that this is to us a matter of very deep interest, and the more so to millers away from the seaports, for this geographical reason,—we being in the centre of England have a very heavy rate to pay before we can get wheat from the seaports into our mills. The railway rate from London by all the railways is 13*s.* 10*d.* per ton to Birmingham, and 14*s.* 2*d.* to Wolverhampton, I speak under correction, but only perhaps to the extent of 4*d.* per ton. The rates from Liverpool are 11*s.* 3*d.* and 12*s.* 6*d.* respectively, the rate from Hull is 13*s.* 10*d.* or 14*s.* 2*d.* Now it needs no advocacy on my part to say that it is a positive necessity to have the purest wheat that we can lay our hands on, so that we shall not have to pay carriage which amounts to two-thirds of the average rate from Bombay to this country. 20*s.* may be taken as an average rate to this country, and yet for the 112 miles distance from London, and the greater part of our Indian wheat comes through London, we have to pay 13*s.* 10*d.*, the same rate which is levied upon the finer description of flour from Vienna, Trieste, America, or any part of the world. We do feel it a very great hardship that we should have to pay for this percentage of dirt, when we have to pay this high rate of 13*s.* 10*d.* per ton. To some people it may seem a small matter, but every 2½ per cent. of dirt means 1*d.* per quarter to us in carriage only. I have heard with much pain that millers do not understand their business. I do not like to have it said that I know so little of my business that I am not willing to give more for a clean sample than a dirty one. If gentlemen choose to confine their business transactions to buying months and months in advance, I grant that a different state of things comes in, but we as millers buy our wheat beforehand to manufacture a certain grade of flour, and we find that the wheat is at times of such an inferior quality that we cannot manufacture the flour out of it. We in the Midlands are not like Mr. Taylor, who is a merchant as well as a miller, and who can deal in Mark Lane just as easily in wheat as flour, whereas we should have to pay a commission for a sale in the market, and have to go to the market again to replace the wheat that came in unfit for the purpose for which

we buy it. There is another matter alluded to in the report of the London Association, and that is with regard to the weevil. We know that it is a most noxious insect, and every one connected with the grain trade has had a great deal to do with the weevil.

But the best way is to clear us of the ravages of the weevil, as weevils are shipped in the bags of wheat. The percentage of weevil in the wheat has grown so enormously that the value of wheat has deteriorated, not 2½ but 5 or 10 to even 15 or 20 per cent., so much so that we cannot use wheat which has been weeviled, not only on account of the loss of flour out of it, but also on account of the condition of the wheat, for we find that the weevil has eaten the grains. It is not a shipper's question; we do not buy the wheat free on board, we buy it to arrive here. Messrs. Ralli should not complain, but do their best to clear us of the ravages of the weevil (laughter); and I say that this difficulty, with regard to the inferior quality of the later arrivals, precludes a great number of millers, most certainly in the Midland counties, from entering into contracts which they otherwise would desire to do, because no amount of compensation which they get from arbitration makes a sample of wheat which comes up unfit for their particular manufacture of equal value to them as what they bought.

The Chairman.—I should like to hear Mr. Appleton, who is here on behalf of the Millers' Association.

Mr. R. H. Appleton (Stockton-on-Tees).—My Lord, on behalf of the National Association of British and Irish Millers, I have pleasure in responding to your call. In the first instance, my Lrod, you thanked the gentlemen here present for attending on an occasion of this kind, but I think we ought to thank you for calling us together on such an important subject as that of Indian wheat. Our wheat supply is a question of deep importance, not only to yourself and to the gentlemen present, but also to the nation at large. If you look for a moment at the present position of our agriculturists you will see that, year by year, they are growing less, and our wants are growing greater, and the question is how is that interregnum to be filled up. It is very natural to look to our own colonies for what we require to as great an extent as possible, and we have been looking for a great number of years to India as the most likely country to supply wheat for England. With regard to the quality of Indian wheat, having used it personally from the beginning, I can safely say it would be a great deal better if it were better cleaned. There is a very great loss to the millers in the way that it is now so filled with dirt. You must know, my Lord, that there are about 7,000 to 8,000 millers in the United Kingdom; but, owing to the foul state of the Indian wheat, I do not think there are above 700 or 800 millers who use it. It is very unsatisfactory to the smaller miller, because he cannot grind Indian wheat, and he cannot sell it, simply on account of its foul state. If the wheat was in a better condition every miller in England would then use it, which he cannot do at the present time. There is no difficulty at all in saying to the shipper, you shall not ship more than two per cent. of foul matter with the Indian wheat; if that were done it would come very much more into general use among the smaller millers, who, I believe I am correct in saying, are doing a large proportion of the business of the country. There is another question,

Mr. Appleton.

and it is a most important one, that is, you cannot clean a great portion of Indian wheat, except through water. If you put wheat through water, you, to a certain extent, destroy part of its properties. Some wheat you may clean with screens, but others you cannot, and therefore it would be an immense advantage if in any way it could be managed so as to ship the wheat from India in a better and cleaner state. I do not wish at all to enter into controversial points about the charters and those other questions, but simply as a miller. I have to thank you most heartily for bringing this matter before the merchants and millers of England, and I do hope that beneficial results will accrue from this meeting to-day.

Mr. Baker. *Mr. Arthur Baker* (Bristol).—My Lord, I am sorry to have to stand up to dispute the reasons for not using Indian wheat which have been given by the gentleman who comes here as representing the Millers' Association of England; but, for my own part, I am bound to say I do not at all agree with all that Mr. Appleton has said. I do not wish now to enter into the controversial subjects as to the modes of cleaning Indian wheat, or as to the advantage or disadvantage of washing wheat. It is a subject on which apparently I should not agree with Mr. Appleton, but I would merely state this, that my firm are large users of Indian wheats, and, however clean the wheat of India came to this country, we should not be able to use any more of it. The use of Indian wheat, as far as England is concerned, is restricted by the want of proper provision for cleaning it, and if the mills are properly furnished for dealing with Indian wheat, other English millers will find no more difficulty in using it than we do. There are conditions appertaining to Indian wheat which prevent its being used in some districts of England to so large an extent as in others. I refer to its quality for use in baking. It is well known that Indian wheat differs very largely in quality, and very largely in nature, and the wheats that suit the public of one part of England do not suit the public of another part of England. My own experience is, trading as I do over a great part of the South and Midland counties of England, that flour which is suitable for one portion of my trade is utterly unsuited for another portion of it, and it is this consideration, more than any other, that restricts the use of Indian wheat in my own mills and in other large mills. My Lord, I quite agree with the remarks that have been made by Mr. Seth Taylor, and I do not think that I can add anything that will give force to those remarks. But there are one or two points which have not been noticed that I would ask your Lordship's attention to for a moment. I think, my Lord, you yourself stated—it is stated in some of the papers before us—that the Indian wheats that are sold in this country are not saleable in France and in other continental countries, by reason of their impurities If I know anything of the corn trade, that is not the fact. My knowledge of the corn trade goes to show that Indian wheats that are easily saleable in England are just as easily saleable on the Continent.

The Chairman.—I do not think that I made such a remark.

Mr. A. Baker.—I beg your pardon if you did not, but it has been stated here to-day. I think I am right in saying that it has been stated that Italy and France did not take Indian wheats by reason of their impurities.

Mr. John M'Dougall.—I have made the statement that Italy, France, and Belgium are buyers of the better class of Indian wheats.

The Chairman.—I find that I did make the statement, and I am quite willing to give my authority.

Mr. A. Baker.—I think further inquiry will prove that that is not the case, that the same qualities saleable here are dealt in equally largely on the Continent. My own experience is this, in buying a cargo of Indian wheat I take care to have in my contract a stipulation for continental option, because, if I wish to re-sell, the continental buyer is as free and eager a buyer as any we have in England. Then the depreciation in quality towards the end of the season, has been spoken of as though it appertained only to Indian wheat. Mr. Taylor pointed out, and I wish to emphasize the fact, that that deterioration goes on, not only in Indian wheat, but in wheat from every country of the world. I do not think that you can point to a single country from which we obtain wheat where the quality does not go down at the end of the season. Mr. Willson spoke of cleaning wheats at the port of shipment to prevent them being weevilled. Now those who have handled weevilled wheats, and who have had experience in storing wheats, will tell you that no cleaning at the port of shipment will get rid of the weevil. The dust, no doubt, may be lessened to a certain extent, but the question is, whether that lessening would not be produced in India at a greater cost than the chance of improvement is worth to the English buyer. However much you clean to prevent weevil, the English buyer would have to look specially to the risk of the wheat arriving in a weevilled condition, and he would not be willing to give the same price as for wheat which is not subject to weevil. I have no objection to raising the standard of Indian wheat.

As a miller I buy my wheats on their relative values as I expect them to come. I know very well that at certain times I must not give the same price for Indian wheat as I should at other times of the year, but it is perfectly useless to make a standard for Indian wheat which is not practicable in the trade. If any one will examine the conditions of the growth of Indian wheat and the way in which it comes forward, they will find that, while a 2 per cent. refraction clause may be very suitable to the Bombay district, it may not be suitable to other districts. It is a well known fact that, in a large part of India, wheat and other grains and seeds are sown together in the same fields, with the object, as I believe, of securing to the native either a crop of wheat or a crop of gram, or something else. He cannot make sure of his seasons, and therefore he takes care to make sure of, at any rate, one crop, and I believe that is the reason why the wheats of some districts contain so much more seed than do the wheats of other districts. As far as the dirt itself goes, I think that the analyses given by Mr. M'Dougall will show that the amount of dirt and dust in very few cases exceed what we have often found in the wheats of other countries, something like 1 to 2 per cent., and Mr. Seth Taylor has very rightly pointed out that, however much the wheat may be cleaned abroad, it will have to go through, in the hands of the millers, exactly the same process of cleaning as now; and, therefore, I think it is quite possible that, by imposing restrictions upon the trade which are not practicable, millers may find

that they have to pay for their cleaner wheats more money than they are worth to them in comparison with the wheats that are now shipped. I am speaking from my own practical experience, but I know that a great many millers will not agree with me.

Mr. Weston. *Mr. John Weston* (Bristol Chamber of Commerce).—My Lord, I fear that Mr. Baker's remarks may have created a false impression of our views in the Bristol Channel. Mr. Grace and myself are deputed to represent the Bristol Chamber of Commerce, and having consulted many of the small millers in Bristol and the neighbourhood on this question; we find they differ entirely from Mr. Baker. That gentleman has gigantic flour mills fitted with the most elaborate machinery, and only represents himself. We in Bristol are thoroughly in accord with the recommendations of this interesting paper sent us from the India Office, and the Bristol Chamber considers that if by any possibility—we do not know how—Indian wheat can be imported here with only 2 per cent. of foreign admixture, it would not only largely increase its sale in our district, but considerably enhance its value.

Mr. Procter. *Mr. Charles J. Procter* (President, Liverpool Corn Trade Association).—My Lord, I have no doubt it has passed through your mind that we are embarked upon a sea of trouble. We have so many different opinions, whereas we should be united. But speaking as being in close touch with the bulk of our large northern millers, both from Liverpool and Hull, I may say that the Indian wheat trade itself is suffering very much from the present system of standards. In fact, we are liable to unexpected disasters, especially towards the end of the season. We may buy wheat to get something fair, and yet may have to receive possibly what is considerably damaged, owing to the standard being made up from actual shipments, and may have to take it without sufficient allowance. There is also the amount of dirt, and, as you would see by the various percentages in the Calcutta and Bombay wheat standards, there is a sliding scale for 2, 4, 6, and 8 per cent. backwards and forwards. What is a miller and buyer to expect? He does not know, and he buys with extreme caution. The larger millers are able to deal with this question a great deal better than the smaller millers. If we elevate the standard, we at once elevate the price of Indian wheat. It may not be observable at once, as comparisons are difficult, but with 2 per cent. refraction on Bombays, they would occasionally be on a par with Californians, and, as compared with other wheats, would at once command a higher value.

This question has arisen frequently, but unfortunately, owing to the lack of cohesion on the part of buyers and millers, it has been very difficult to treat with. Frequently we have talked the matter over in our Association at Liverpool, and tried to bring about a change in the standards with the London Association, but there has never been sufficient force to make any alteration, and I only hope that the effect of this meeting may be to so open the eyes of all that we may arrive at some satisfactory conclusion as to the making of a London standard which will practically meet all the difficulties of the case. The question of analysis, although it has been referred to as a very difficult one, may perhaps after all not prove to be the bugbear that some imagine. Analysis might prove an expensive matter, but the idea is not so much to obtain

scientific accuracy as to get an approximate result, and to gradually elevate the standards.

The Chairman.—I will now ask Mr. Harrison Carter, of the London Chamber of Commerce, to favour us with his views.

*Mr. J. Harrison Carter** (London Chamber of Commerce).—My Lord, I was not expecting to be called upon to speak to-day, but I shall add my few words to the discussion with very great pleasure, but with a certain amount of hesitancy. It seems to me that the discussion has turned too much perhaps on really a trade aspect, and that it would have been probably better if a patriotic view had been taken on this question. It seems to me important for our national interests that this enormous importation of wheat from one of our greatest possessions should come to this country in the best and purest state. Now, my Lord, my qualification for addressing this meeting to-day is, I believe, based on the fact that I have taken some part in introducing into this country the modern system of milling. Well, my Lord, I am astonished beyond measure at the uncompromising document put forward by the London Corn Trade Association. But, my Lord, I am glad to say that that document has been spoken to in a far less uncompromising, in fact in a very liberal, spirit by one of the Association, Mr. Seth Taylor, and therefore I do hope that the uncompromising nature of the document may not be carried to its fullest extent. Now, with regard to the system of cleaning Indian wheats to which Mr. Baker has referred, I think that Mr. Baker himself will acknowledge that it is only comparatively recently that he has been able to carry out a satisfactory method of cleaning these wheats, and that even now that system is not perfect. But, my Lord, though I have not myself constructed machines for cleaning Indian wheat, in furnishing and erecting mills, and in carrying out contracts, I have had to select those that I thought best. A short time ago I had to fit up a mill in Bombay, and I sent out the very best wheat-cleaning and washing machinery that I could. But even the millers in Bombay were not satisfied with that machinery. Only quite recently I completed a large contract in Calcutta, and I was told by the millers there that they would not require wheat-cleaning machinery, because they could purchase the clean wheat. Well, my Lord, only within the last few weeks I have had my first letter from the engineer in charge of the erection of that mill. He says:—"We have started the mill. We have had a very satisfactory run. We have been working eight days, ten hours a day, but the 'break' flour is not clean, it seems impossible to get it clean." My Lord, that is because they would not take the wheat-cleaning machinery which I had recommended them. But I should add, so certain was I that they would find themselves in very great difficulties if they did not have this machinery, that I kept every mail writing to them and impressing upon them the fact that they must have it, and at last they sent me a telegram ordering it, and my foreman says, "We shall never get this flour cleaned till the machinery arrives." Well now, if they cannot in India—where they tell me they could procure clean wheat—if they cannot procure them there, how is it to be expected that persons in England, buying through merchants in India, can obtain them? I can

Mr. Carter.

* See also letter from this gentleman, Appendix D, in Appendices to Part II.

speak with perhaps a greater knowledge of the millers of this kingdom even than the Corn Trade of London, because my business has taken me over the whole kingdom, and some of the largest and most extensive millers in the kingdom at the present time have, I think I may safely say, never used a cargo of Indian wheat, simply because they have found the quality unsatisfactory unless the dirt was abstracted from it, and they have found in using Indian wheat that with the most perfect machinery it is impossible up to the present time to get a perfect cleaning of that wheat. I could say much more, but I have already occupied too much of your time. I think that the London Corn Trade Association would do well if they would listen to the words spoken from Hull and Liverpool and from the millers of this country, and would try to do something to wipe out the effects of this uncompromising document.

Mr. Nicolas. *Mr. P. J. Nicolas.*—My Lord, may I say one word as a Calcutta shipper. We quite agree that the wheat ought to be much cleaner than it is, but this is entirely a question of price. If buyers in this country will only pay the additional cost of cleaning the wheat in India they shall have it cleaned. My firm at one time were told that if we sent clean wheat into this country we should not only get a fine price, but establish a great name, and accordingly I bought a machine here costing some 30*l.* or 40*l.*, and sent it out to Calcutta. We cleaned a small quantity there every day and shipped it when it was ready, but the result was that when this wheat was put on the stands in London it fetched very little more than the wheat that was sold as "fair average quality." The millers and others simply stated "We cannot afford to pay for it," and they say so still. If you will ask Mr. Taylor or any of the other large millers, they will tell you that they must clean the wheat here, and by having it cleaned at the other side as well, they are practically paying for having it cleaned twice over. The whole thing resolves itself into a question of price. If consumers here are willing to pay for a double cleaning they can have it double cleaned.

My firm will any day make a contract for wheat cleaned down to 2 per cent., if the buyers here will only pay the price of cleaning down to that percentage.

There has been some misapprehension about the linseed question. I happen to know something about linseed.

It is stated in one of the papers that your Lordship put forth that linseed has improved in cleanliness lately. Undoubtedly it is cleaner than it was 20 or 25 years ago, but the crushers here took it into their heads, as some of the Liverpool Association are doing now with wheat, that they would like to get nearly pure linseed without mutual analysis, and that they would run the chance of getting it cleaned as they did before and at the same price. The consequence has been—some of the gentlemen in the room can bear me out—that the seed has for the last two or three years come in much dirtier. We have gone away from the mutual analysis basis, and we are coming back to dirty seed again. So that it is a question of price both in wheat and in linseed. If you pay us for what we ship, you will have a good quality, but if you do not, whatever agreements we may come to otherwise will fall to the ground.

Mr. Grace. *Mr. A. R. Grace* (Bristol Chamber of Commerce).—My Lord, I can scarcely agree with the remarks of the last speaker. He has spoken

about cleaning the wheats. I think what we really want is to prevent the putting of the dirt in, and let us bring the wheat clean from the natives and ship it in its purity, it would then not require cleaning.

*Mr. Samuel Smith** (Sheffield).—My Lord I happen to be situated between two seas, about equi-distant with Hull on one side, and Liverpool on the other, and I should be very glad to pay something extra for the clean wheat. I find in the Report, of which you have kindly sent me a copy, in answer to a question, "Whether the millers approved of a form of contract limiting the admixture of dirt, seeds, and grain other than wheat to 2 per cent; how many approved of it?" *There were, 429*, and how many disapproved of it? I find there were *four*, and I presume the four had all got good cleaning machines. I have got the best cleaning machinery that I can find, but still I shall be very glad indeed to have the wheat coming to me ready cleaned I have the sea 60 miles distant on one side, and 70 miles on the other, and it is a serious thing for me as it is for every one in our insular position, to get wheat to our mill, and then to find that we cannot use it when we have got it there. We could not find a market for it if we got it home and it did not suit us, we should have to send it back to the ports, and to get what we could for it. I have known an instance in which a miller bought a large quantity of wheat, and under arbitration he was obliged to take it, and it ruined him. These considerations are not applicable to those who are near the ports. These gentlemen who live at the ports, and who have got good cleaning machinery, can deal with it with one cleaning, I suppose; but I am in the habit of using about 100 tons of Indian wheat per week, and I clean it all twice. I have to clean it twice, and as to the gentleman who said that if we will pay for clean wheat we shall have it, I for one should be very glad to have it, and then I shall have to clean it only once. I have to give it a separate cleansing; and we have to put some of it through water, and the water gets into the percolations that the weevils have made, and it damps the starchy part of the wheat, and sometimes renders it almost unfit for use; and it is a grief and trouble that we on this side have to endure. I could not suggest any manner in which those people abroad could manage their business better. I do not suggest that the ryots will clean it better than they do, because they have not the means. Perhaps the buyer who collects it between where it is grown and the port may have some difficulty, but is there any reason why the shippers should not have it graded, the same as they do in America? and if they can enhance its value, and turn the dirt out, and make it 5 per cent better, I will give more than they will have to pay for the cleaning I can hardly understand this Report where it says that people will not give more for clean wheat than unclean wheat. I always thought that the millers were obliged to be a little 'cute if they are to live at all, and it is an extraordinary thing to me if millers will give the same price for inferior wheat that they do for clean wheat Another advantage of cleaning the wheat would be that Mr. M'Dougall may lose his calling, we should not want any analysis. If we got wheat clean, we could not have anything better, and we should be satisfied to be saved the trouble of cleaning, and

Mr. Smith.

* See also letter from this gentleman, Appendix E.

we should be able to value the wheat. I, as a user of Indian wheat, think very highly of it, and I should use more of it than I do but for the difficulties that we have, and especially, as one gentleman who spoke before said, the difficulty of getting out the stones. I do not believe that difficulty is quite overcome yet, but it is very much improved. I believe that the thing is advancing. We have been told that the Indian wheats have been improved in shipment. There has been much improvement, from what I have seen, in from ten to fifteen years. That is a favourable augury. That shows that they are capable of improving it, and it remains for them to try to do it better; I think that the buyers, to a great extent, have the question in their own hands If we as millers were to say we will only buy clean wheat of a particular class and have no other, I think that the sellers, in their interests (and no one knows their own interests so well), would give us all that we ask for. I am satisfied that it would be better for them and for us. It cannot be of any value to them to send me 36 stones of Indian dirt to Sheffield, where we have enough of that already, and ask me to pay the price of good wheat for it.

Mr. M'Dougall.—Perhaps I may be allowed to reply to Mr. Smith, who said that I should lose with reference to the analysis. Well, I have no calling of that sort.

Mr. Todd. *Mr. J. H. Todd* (London Corn Trade Association).—Objection has been taken to what is called the uncompromising nature of the London Corn Trade Association reply. Well, we have looked into this matter most carefully, and we have done our best to meet the views contained in the Report which your Lordship has favoured us with, but we find insuperable difficulties in the course of the trade, and nothing dropped to-day has shown us how to get over them. I am perfectly certain, as a Bombay merchant (and I can speak not only for them but for the Calcutta merchants), that the moment any practical suggestion is made whereby our trade may be improved, and either our profits made larger or our losses smaller, no one would be more glad to receive them than we should.

Lord Cross. *The Chairman.*—Well, gentlemen, I have heard this discussion with the greatest interest. I did not expect that you would come at once to a unanimous resolution, or that you would come to a resolution at all here. That is not the object of this meeting. The object was to have a fair and free discussion upon this very important matter, and I think you will all admit that we have had a very fair and free discussion.

(The proceedings then terminated.)

Note.—The report of the above proceedings has been corrected throughout by the several gentlemen who addressed the meeting on the occasion.

APPENDICES TO PART II.

Appendix A.

1.

No. 20.—East India Shipment Delivery Contract.

The Liverpool Corn Trade Association, Limited.

Liverpool, 25th May 1889.

Liverpool shipment Delivery Contract.

We have this day sold to *A. B.** on the terms of the Printed Rules of The Liverpool Corn Trade Association, Limited, and the Clearing House regulations relating to Margins*, *about one hundred tons Number One Bombay wheat, London standard,* at 6*s.* 6*d.* per 100 lbs., *say six shillings and sixpence.*

To be of fair average quality at the time and place of shipment.

June $\frac{and}{or}$ *July* shipment from *Bombay viâ Canal* to Liverpool, per steamer or steamers.

To be delivered, ex quay $\frac{and}{or}$ store, at seller's option, in fair merchantable condition; a slight dry warmth and slight weevilling not to be objected to. Importer's bags for seller's account.

Particulars of shipment shall be declared by the first seller to his buyer before the vessel named has appeared in the Bill of Entry, unless the vessel brings its own advices, in which case an extra day shall be allowed All declarations shall be made for shipments by steamers within thirty-five days, and for shipments by sailing vessels within fifty days after the date or month of shipment named in the contract, or if more than one month is named, then after the actual month of shipment. If the seller shall make default of declaring within the period above named, the buyer shall have the right of closing the contract by invoicing the grain back to the seller, at its market value, such market value to be settled by arbitration, and it shall also be in the discretion of the arbitrators to award damages, if any, not exceeding 5 per cent. of such value, according to the special circumstances of the case. There shall not be more than two separate declarations on each 2,500 centals of grain. In case of re-sales, a copy of first declaration shall be accepted by buyers if passed on in due course.

Ship damaged or sea-water damaged grain may be rejected, and the contract, so far as regards the quantity rejected, shall be at an end.

* The portion of the above form filled up in writing is shown in *italics.*

In the event of the grain declared, or any part thereof, being prevented from arriving by perils of the seas, the contract, so far as regards such grain shall be at an end.

In case of prohibition of export, blockade, or hostilities preventing shipment, this contract, or any unfulfilled part thereof, shall be at an end.

Seller to pay *our* brokerage of *half* per cent., contract cancelled or not cancelled

Bill of Lading to be considered proof of date of shipment in the absence of evidence to the contrary.

Any separate parcel declared in partial execution of this contract shall be considered as if shipped under a separate contract.

If the grain tendered, or any part thereof, is not in accordance with the contract as regards quality $\frac{\text{and}}{\text{or}}$ condition, the arbitrators shall award that the grain be taken with an allowance, or be invoiced back to the seller at the market price of the grain contracted for on the day of arbitration, in either case with or without a penalty, not exceeding 5 per cent on such price, according to the special circumstances of the case.

If at the time of tender the standard for the month's shipment has not been made up, the arbitrators may decide on the last previous available standard, or on such other evidence as they may think fit, whether or not the grain is to be invoiced back to the seller, but the price at which it is to be invoiced back shall stand over until the standard for the month in which the grain was shipped has been made up, and shall then be decided by arbitration, according to the price of the day of the former arbitration. Any claim of the buyer to an allowance from the contract price shall also stand over, and be decided by arbitration in like manner.

Payment, as per Rule 8, allowing interest equal to three months from date of being ready for delivery.

This contract is made between yourselves and ourselves and not by or with any person, whether disclosed or not, on whose instructions or for whose benefit the same may have been entered into.

(*Signed*) *C. D.*

No. 20.—East India Shipment Delivery Contract.

The Liverpool Corn Trade Association, Limited.

Liverpool, 25th May 1889.

We have this day bought from *C. D.*, on the terms of the Printed Rules of the Liverpool Corn Trade Association, Limited, and the Clearing House regulations relating to Margins, *about one hundred tons Number One Bombay wheat, London standard,* at 6*s.* 6*d.* per 100 lbs., *say six shillings and sixpence.*

To be of fair average quality at the time and place of shipment.

June $\frac{\text{and}}{\text{or}}$ *July* shipment from *Bombay, viâ Canal* to Liverpool, per steamer or steamers.

To be delivered, ex quay $\frac{\text{and}}{\text{or}}$ store, at seller's option, in fair merchantable condition ; a slight dry warmth and slight weevilling not to be objected to. Importer's bags for seller's account

Particulars of shipment shall be declared by the first sellers to his buyer before the vessel named has appeared in the Bill of Entry, unless the vessel brings its own advices, in which case an extra day shall be allowed. All declarations shall be made for shipments by steamers within thirty-five days, and for shipments by sailing vessels within fifty days after the date or month of shipment named in the contract, or if more than one month is named, then after the actual month of shipment. If the seller shall make default of declaring within the period abovenamed, the buyer shall have the right of closing the contract by invoicing the grain back to the seller, at its market value, such market value to be settled by arbitration, and it shall also be in the discretion of the arbitrators to award damages, if any, not exceeding 5 per cent. of such value, according to the special circumstances of the case. There shall not be more than two separate declarations on each 2,500 centals of grain. In case of re-sales, a copy of first declaration shall be accepted by buyers if passed on in due course.

Ship damaged or sea-water damaged grain may be rejected, and the contract, so far as regards the quantity rejected, shall be at an end.

In the event of the grain declared, or any part thereof, being prevented from arriving by perils of the seas, the contract, so far as regards such grain, shall be at an end.

In case of prohibition of export, blockade, or hostilities preventing shipment, this contract, or any unfulfilled part thereof, shall be at an end.

Seller to pay *C. D.'s* brokerage of *half* per cent., contract cancelled or not cancelled.

Bill of Lading to be considered proof of date of shipment in the absence of evidence to the contrary.

Any separate parcel declared in partial execution of this contract shall be considered as if shipped under a separate contract.

If the grain tendered, or any part thereof, is not in accordance with the contract as regards quality $\frac{\text{and}}{\text{or}}$ condition, the arbitrators shall award that the grain be taken with an allowance, or be invoiced back to the seller at the market price of the grain contracted for on the day of arbitration, in either case with or without a penalty, not exceeding 5 per cent. on such price, according to the special circumstances of the case.

If at the time of tender the standard for the month's shipment has not been made up, the arbitrators may decide on the last previous available standard, or on such other evidence as they may think fit, whether or not the grain is to be invoiced back to the seller, but the price at which it is to be invoiced back shall stand over until the standard for the month in which the grain was shipped has been made up, and shall then be decided by arbitration, according to the price of the day of the former arbitration. Any claim of the buyer to an allowance from the contract price shall also stand over, and be decided by arbitration in like manner.

Payment, as per Rule 8, allowing interest equal to three months from date of being ready for delivery.

This contract is made between yourselves and not by or with any person, whether disclosed or not, on whose instructions or for whose benefit the same may have been entered into.

(*Signed*) *A B*

Adopted 7th December 1887.

Entered at Stationers' Hall, and sold only at the Clearing House of the Association.

2.

No. 21.—East India Shipment and Delivery Contract.

Liverpool Standard. Mutual Allowances.

The Liverpool Corn Trade Association, Limited.

*Liverpool,*_____*188*

Liverpool Standard mutual allowances.

We have this day sold to_____, on the terms of the Printed Rules of the Liverpool Corn Trade Association, Limited, and the Clearing House regulations relating to Margins,____

_____

at_____ per 100 lbs._____

To be equal to the Official Standard_____ adopted by, and in force with, the Liverpool Corn Trade Association, Limited, at this date.

_____ shipment from_____

_____ *viâ*_____ to Liverpool, per steamer or steamers_____

To be delivered, ex quay $\frac{\text{and}}{\text{or}}$ store, at seller's option, in fair merchantable condition; a slight dry warmth and slight weevilling not to be objected to. Importer's bags for seller's account.

Particulars of shipment shall be declared by the first seller to his buyer before the vessel named has appeared in the Bill of Entry, unless the vessel brings its own advices, in which case an extra day shall be allowed. All declarations shall be made for shipments by steamers within thirty-five days, and for shipments by sailing vessels within fifty days after the date or month of shipment named in the contract, or if more than one month is named, then after the actual month of shipment. If the seller shall make default of declaring within the period above named the buyer shall have the right of closing the contract by invoicing the grain back to the seller, at its market value, such market value to be settled by arbitration, and it shall also be in the discretion of the arbitrators to award damages, if any, not exceeding 5 per cent. of such value, according to the special circumstances of the case. There shall not be more than two separate declarations on each 2,500 centals of grain. In case of re sales, a copy of first declaration shall be accepted by buyers if passed on in due course.

Ship damaged or sea-water damaged grain may be rejected, and the contract, so far as regards the quantity rejected, shall be at an end.

In the event of the grain declared, or any part thereof, being prevented from arriving by perils of the seas, the contract, so far as regards such grain, shall be at an end.

In case of prohibition of export, blockade, or hostilities preventing shipment, this contract, or any unfulfilled part thereof, shall be at an end.

Seller to pay_____brokerage of_____per cent., contract cancelled or not cancelled.

Bill of Lading to be considered proof of date of shipment in the absence of evidence to the contrary.

Any separate parcel declared in partial execution of this contract shall be considered as if shipped under a separate contract.

If the grain tendered, or any part thereof is, as regards quality $\frac{\text{and}}{\text{or}}$ condition $\frac{\text{and}}{\text{or}}$ admixture of dirt, inferior to the standard, the arbitrators shall award either that the grain be taken with an allowance or be invoiced back to the seller at the market price of the grain contracted for, on the day of arbitration, in either case with or without a penalty not exceeding 5 per cent. on such price, according to the special circumstances.

A difference in value of one penny per cental, or less, shall not entitle buyer or seller to any allowance, but this stipulation shall not be taken into account should the difference in value exceed one penny per cental. Should the quality of the grain tendered be superior to the standard by more than one penny per cental, the seller shall be entitled to an increase of the price, such increase not in any case to exceed twopence per cental.

Payment, as per Rule 8, allowing interest equal to three months from date of being ready for delivery.

This contract is made between yourselves and ourselves and not by or with any person, whether disclosed or not, on whose instructions or for whose benefit the same may have been entered into.

No. 21.—East India Shipment and Delivery Contract.

Liverpool Standard. Mutual Allowances.

The Liverpool Corn Trade Association, Limited.

*Liverpoo*_____ *188*

We have this day bought from_____, on the terms of the Printed Rules of the Liverpool Corn Trade Association, Limited, and the Clearing House regulations relating to Margins,____

_____

at_____per 100 lbs. _____

To be equal to the Official Standard_____ adopted by, and in force with, the Liverpool Corn Trade Association, Limited, at this date.

_____shipment from_____

*vid*_____to Liverpool, per steamer or steamers_____

To be delivered ex quay $\frac{\text{and}}{\text{or}}$ store, at seller's option, in fair merchantable condition; a slight dry warmth and slight weevilling not to be objected to. Importer's bags for seller's account.

Particulars of shipment shall be declared by the first seller to his buyer before the vessel named has appeared in the Bill of Entry, unless the vessel brings its own advices, in which case an extra day shall be allowed. All declarations shall be made for shipments by steamers within thirty-five days, and for shipments by sailing vessels within fifty days, after the date or month of shipment named in the contract, or if more than one month is named, then after the actual month of shipment. If the seller shall make default of declaring within the period above named the buyer shall have the right of closing the contract by invoicing the grain back to the seller, at its market value, such market value to be settled by arbitration, and it shall also be in the discretion of the arbitrators to award damages, if any, not exceeding 5 per cent. of such value, according to the special circumstances of the case. There shall not be more than two separate declarations on each 2,500 centals of grain. In case of re-sales, a copy of first declaration shall be accepted by buyers if passed on in due course.

Ship damaged or sea-water damaged grain may be rejected, and the contract, so far as regards the quantity rejected, shall be at end.

In the event of the grain declared, or any part thereof, being prevented from arriving by perils of the seas, contract, so far as regards such grain, shall be at an end.

In case of prohibition of export, blockade, or hostilities preventing shipment, this contract, or any unfulfilled part thereof, shall be at an end.

Seller to pay_____brokerage of_____per cent., contract cancelled or not cancelled.

Bill of Lading to be considered proof of date of shipment in the absence of evidence to the contrary.

Any separate parcel declared in partial execution of this contract shall be considered as if shipped under a separate contract.

If the grain tendered, or any part thereof, is, as regards quality $\frac{\text{and}}{\text{or}}$ condition $\frac{\text{and}}{\text{or}}$ admixture of dirt, inferior to the standard, the arbitrators shall award either that the grain be taken with an allowance, or be invoiced back to the seller at the market price of the grain contracted for on the day of arbitration, in either case with or without a penalty not exceeding 5 per cent. on such price according to the special circumstances.

A difference in value of one penny per cental, or less, shall not entitle buyer or seller to any allowance, but this stipulation shall not be taken into account should the difference in value exceed one penny per cental. Should the quality of the grain tendered be superior to the standard by more than one penny per cental, the seller shall be entitled to an increase of the price, such increase not in any case to exceed twopence per cental.

Payment, as per Rule 8 allowing interest equal to three months from date of being ready for delivery.

This contract is made between yourselves and ourselves and not by or with any person, whether disclosed or not, on whose instructions or for whose benefit the same may have been entered into.

Adopted 7th December 1887.

Entered at Stationers' Hall, and sold only at the Clearing House of the Association.

3.

Bye-laws (including Rules) of the Liverpool Corn Trade Association, Limited, in force on and after 9th May 1887.

Section B.

Rules relating to Contracts.

1 Buyers of all grain, flour, meal, and other articles must examine the bulk as early as possible after the purchase is effected, or in cases where the goods are sold for future delivery, as soon as possible after they are ready for delivery, and tender in writing made to the buyer. The buyer shall be deemed to have accepted the bulk, unless he shall have delivered notice, in writing, to the seller before 6 P.M. (Saturdays, 3.30 P.M.) of the day of sale, or day of tender, as the case may be, rejecting the bulk or stating reasons why it cannot be examined within that time. In no case, however, shall the time for examination or rejection of the bulk be extended beyond 11 A.M. of the business day next following the day of sale or tender, but this Rule shall be subject to the provision in Rule No 11 as to heated, sour, or damaged flour. Liverpool Corn Trade bye-laws. Examination, acceptance and rejection of bulk.

In the case of tenders made through the Clearing House, all notices shall be handed to the Clearing House Secretary within the hours provided by the Clearing House regulations.

2. Tenders of goods sold for future delivery shall be made before 11 A.M., and if made later shall be deemed to have been made on the business day next following, but any goods tendered before 11 A.M. may be re-tendered, in whole or in part, to successive buyers at any time before 3 o'clock of the same day, provided such re-tender is made within fifteen minutes from the time when the person making such re-tender has received the tender for such goods. Any person failing to re-tender within fifteen minutes of the time aforesaid, and before 3 o'clock, shall be deemed to be the last buyer. Each buyer shall mark on the tender the time at which he received it, and, in case of re-tender, shall communicate the time to the succeeding buyer. Tenders shall state the contract date, and shall be accompanied by a sampling order, identifying the goods tendered, and shall be made to the buyer whose name appears on the contract, at his office; but if the buyer has no office within a radius of 500 yards of the Corn Exchange, then the tender may be made to the broker at his office, Tenders.

or in case no broker has been employed, then at an office in Liverpool, to be named previously by the buyer, and to be situated within such radius.

But as regards registered contracts, and as regards the last day of the currency of any delivery contract, or of each month, this rule shall be subject to the regulations of the Clearing House for the time being in force.

When goods are sold for delivery within any given period, it shall be a sufficient compliance with the contract if they are ready for delivery, and notice thereof be given within that period.

Holidays. 3. When the last day on which a tender or declaration should be made is a holiday, that is to say, a Sunday, New Year's Day, Good Friday, the Saturday before Easter Day, the Saturday before Whit Monday, the Saturday before the Bank holiday in August, Christmas Day, Bank holiday, or holiday appointed in accordance with the bye laws, the tender or declaration shall be considered as due on the business day next preceding. Any tender or declaration made on any such holiday shall be deemed to have been made on the business day next following.

Separate declaration or tende. 4 There shall not be more than four separate declarations or tenders for each 5,000 centals of grain, or 2,500 centals of flour or meal; or more than two declarations or tenders for each 2,500 centals of grain, or 1,250 centals of flour or meal, or any less quantity. If goods ex different ships or different warehouses be tendered on one form the tender ex each ship or warehouse shall, for the purpose of this rule be considered a separate tender.

Meaning of "about." 5. The word "about," when used in contracts with reference to quantity, shall mean within 5 per cent. over or under the quantity stated.

Default in tendering. 6. In case a seller for future delivery shall make default in tendering in accordance with these rules, the contract shall be closed on the last business day of the period specified in the contract for tenders, and the seller shall pay to the buyer the difference between the contract price and the price of such last business day, together with such penalty, not exceeding 5 per cent. on such price, as may be decided by arbitration.

Clearing Hou regulations. 7. Contracts for future delivery, and for shipment and delivery, shall be subject to the general Clearing House regulations, and to the regulations relating to Margins in force at date of each call or release respectively, and to the regulations relating to declarations in force at the date of each declaration, and to the regulations relating to tenders in force at date of each tender.

Payment. 8 All payments for goods sold for future delivery shall be made within three business days from the date of the tender, by cash or by deposit made in accordance with the Clearing House regulations, in exchange for a delivery order.

Insolvency of seller or buyer. 9. If, before the maturity of any contract, either party shall suspend payment, or become bankrupt or insolvent, or be declared a defaulter by the Clearing House committee, the contract shall forthwith be closed either at the market price then current for similar goods for delivery at the time named in the contract, or, at the option of the other party, at a price to be ascertained by re-purchase or re-sale before the expiration of the following business day, and the difference between the contract price and the closing price shall be the measure of damages payable under such contract. This rule is subject to any exceptions made by the Clearing House regulations relating to Periodical Settlements.

10. The Seller's responsibility shall cease on delivery into carts or other conveyances from the ship quay, or warehouse. When goods are sold "ex ship," or "ex quay," the buyer shall take delivery at the ship or quay in carts or other conveyances provided by him, and in case he shall fail to do so within twenty-four hours after notice of the seller's readiness to deliver, the buyers shall bear all fines, demurrage, watching or other expenses which may be incurred, and after a further period of forty-eight hours the seller shall be at liberty to land, weigh over on the quay, or warehouse the goods at the buyer's expense. The buyer shall not be required to take delivery of more than 2,000 centals of grain, flour, or meal per day. In case of sales "ex ship," any goods landed in excess of the above-named quantities shall be deemed to have been discharged at the seller's risk and expense, and the buyer may require the excess to be weighed and delivered in the same manner as if the sale had been made "ex quay." If required, the buyer shall provide and send to the place of delivery the requisite number of sacks. All grain imported in bags shall be shipped at seller's expense into bulk, either in ship's hold or on the quay, before delivery into buyer's sacks. The buyer may require each sack to be weighed singly. Delivery.

In case goods sold for future delivery shall be tendered in warehouse, the buyer shall take delivery within twenty-four hours after the tender is made, and in case he shall fail to do so, the seller shall be at liberty, after a further period of forty-eight hours, to weigh over the goods, and in case of flour, at the expense of the buyer, to stow back; and the buyer shall be responsible for all rent, fire insurance, and other charges and expenses which may thereafter be incurred.

11. Except as provided in Rule 10, rent on all grain, flour, and meal in warehouse or other store shall be borne by the seller for fourteen clear days from the day of sale, unless the delivery shall in the meantime have taken place, and after the expiration of that time the seller shall be at liberty to weigh over the goods, and, until delivery, to charge the buyer with rent. Rent.

12. Risk of fire shall be upon the seller on such part of the goods sold as shall remain undelivered, whether paid for or not. Risk of fire.

Goods shall, for the purpose of this Rule only, be considered as delivered, and at the buyer's risk as regards fire:—

(*a*) When they shall have been transferred in the books of a warehouse keeper under a transfer order directing the warehouse keeper to transfer them into the name of the buyer.

(*b*) At 12 o'clock noon of the day next following that on which such a transfer order shall have been handed to the buyer.

A delivery order directing the warehouse keeper to deliver the goods to the buyer shall not for the purposes of this Rule, be considered a transfer order.

The mere act of weighing over shall not constitute a delivery, nor shall a delivery of part be considered a delivery of the whole. The seller may, after the expiration of fourteen clear days from the day of sale, charge the buyer with cost of fire insurance until delivery be made.

13. Risk of condition of grain in warehouse shall be upon the buyer, Risk of condition.

but so long as the goods shall be under control of the seller the buyer may, as often as he may think proper, require the seller to have the grain turned at the buyer's expense; and for all rent, fire insurance, porterage and other expenses and charges which the seller shall be entitled to, under this or any of the preceding Rules, he shall be entitled to a lien on the goods.

Rejection and weighing.

14. Seven running days from day of sale shall be allowed to buyers of flour, during which period they may reject heated, sour, and damaged flour; on and after the eighth day until delivery, or until the goods are weighed over, whichever event shall first happen, but no longer, externally damaged flour only may be rejected

Each barrel of flour from Canada and all American ports shall be considered to weigh 1 cwt. 3 qrs. 20 lbs gross, and allowance shall be made for any deficiency from this weight. Sack flour shall be weighed gross, and be invoiced accordingly.

Time for claims.

15. When buyers of Californian, Oregon, Chilian, Australian, and New Zealand cargoes or parcels of grain, flour, or meal require arbitration, they shall make their claim and nominate their arbitrators within seven clear days after final discharge of the cargoes or parcels.

When buyers of East Indian grain on London standards have claimed arbitration, they shall, within 21 days after the making up of the relative standards has been advertised, nominate their arbitrator, and notify the sellers that they intend to proceed with the arbitration, otherwise their claim for arbitration shall be deemed to have been withdrawn.

Default on contract.

16. In default of fulfilment of contract, either party shall, except in cases provided for by Rule 6, have the right of re-sale or re-purchase, as the case may be, either publicly or privately, and the defaulter shall make good the loss, if any, by such re-purchase or re-sale on demand.

Arbitration.

17 All disputes arising out of transactions connected with the trade shall be referred to two arbitrators, one to be chosen by each party in difference, the said arbitrators having power to call in a third in case they shall deem it necessary. In the event, however, of one of the parties appointing an arbitrator, and the other refusing, or for three days after notice in writing of the appointment neglecting to do so (such notice to be delivered personally, or left at the usual place of business of such other party), or in case the arbitrators appointed by the parties shall not within seven days after their appointment agree to an award, or appoint a third arbitrator, or, after the appointment of such third arbitrator, in case of the death, refusal to act, or incapacity of any one or more of such three arbitrators, then upon application of either of the disputing parties, the question in dispute shall stand referred to two arbitrators to be nominated by the President for the time being of the Association, or by the Vice President in case of the absence of the President, his illness, or interest in the matter in dispute; and in case of the absence of the Vice-President, his illness, or interest in the matter in dispute, then the Directors, on the application of either of the disputing parties, shall appoint two arbitrators; and in case the two arbitrators appointed, whether by the President, the Vice-President, or the Directors, shall not within seven days after their appointment agree to an award, or choose a third arbitrator, then the Directors shall appoint a

third arbitrator, and shall, in the case of the death, refusal to act, or incapacity of any such three arbitrators, from time to time substitute a new arbitrator or arbitrators in the place of the arbitrator or arbitrators so dying, refusing, or incapacitated.

The arbitrators appointed shall in all cases be members of the Association, and no person having any interest in the matter in dispute shall be competent to act as an arbitrator.

The award of any two arbitrators in writing signed by them (subject only to the right of appeal hereinafter mentioned) shall be conclusive and binding upon all disputing parties both with respect to the matter in dispute, and all expenses of the reference and award. Every award shall be written on a form to be settled by the Directors and supplied by the Secretary of the Association at a charge (to be fixed by the Directors) not exceeding 10*s*., which charge shall be paid by such one of the parties to the reference as the arbitrators may determine, and the sums received by the Secretary for such forms shall be applied in payment of the expenses of the Association.

No arbitrator shall be entitled to demand a higher fee than 3*l*. 3*s*., nor shall such fee be less than 1*l* 1*s*. for every requisite sitting.

In case either party shall be dissatisfied with the award, a right of appeal shall lie to the Directors, provided it be claimed not later than 12 o'clock on the second day after that on which the objecting party shall have notice of the award (Sundays and holidays, as defined in Rule III, not to be counted), and provided also the appellant (if a Member of the Association) do pay to the Association as a fee for the investigation the sums following, *viz.*:—If the parcel or parcels in respect of which the appeal is brought shall exceed 5,000 centals, the sum of 10*l*.; if the parcel or parcels in respect of which the appeal is brought shall not exceed 5,000 centals, the sum of 5*l*.; or provided also the appellant (if not a Member of the Association) do pay to the Association as a fee for the investigation the sums following, *viz*:—If the parcel or parcels in respect of which the appeal is brought shall exceed 5,000 centals, the sum of 15*l*.; if the parcel or parcels in respect of which the appeal is brought shall not exceed 5,000 centals, the sum of 7*l* 10*s*. The Directors shall have power to award by whom the fee for investigation shall be borne. An award signed by the Chairman of the meeting which shall hear such appeal, and countersigned by the Secretary or his substitute, shall be deemed to be the award of the Directors, and shall in all cases be final.

No Director having any interest in the matter in dispute shall vote on the question of the appointment of arbitrators, or in case of an appeal, sit or vote on the hearing of such appeal: nor shall the arbitrators, whose decision is appealed against, vote on the hearing of the appeal.

Neither party shall bring any action against the other of them in respect of any such dispute except for the amount so settled by arbitration, and it is expressly agreed that the award shall be a condition precedent to the right of either party to sue the other in respect of the matter in dispute.

For the purpose of enforcing any award, by attachment or otherwise, this rule and any contract referring thereto, may be made a rule of any

divisions of Her Majesty's High Court of Justice in England or in Ireland, or an order of the Court of Session in Scotland.

(*Amended Clause, adopted 23rd May 1888.*)

4.

The Liverpool Corn Trade Association, Limited, Clearing House regulations, in force on and after 1st October 1888.

Liverpool Clearing House regulations.

Section A.

General Regulations.

Constitution of Clearing House Committee.

1. The Clearing House Committee, hereinafter called "the Committee," shall consist of the President, Vice President, and seven other members of the Association, to be elected annually by the Directors. Directors shall be eligible. Casual vacancies shall be filled up by the Directors as they occur. The Committee shall elect their own Chairman, and two members shall form a quorum.

Duties and powers.

2 The duties of the Committee shall be to make all necessary arrangements and regulations for periodical settlements, declarations, tenders, clearances, payments, deposits, and interest or discount to be paid or allowed thereupon, &c., in connection with the future delivery business.

Settlement of disputes.

3. All disputes arising out of the settling or clearing of contracts, or out of any matter connected with the business of the Clearing House, shall be settled by the Committee, and their decision signed by the Chairman or acting Chairman, shall be binding on all parties, subject to the right of appeal to the Directors in manner provided by the printed rules of the Association.*

When the Committee consider it advisable, a fee shall be charged by them for deciding cases of dispute brought before them

Special cases.

4. The Committee shall have power to deal with and regulate all cases not provided for by the existing regulations, and arising out of any clearance or settlement, but any party dissatisfied with the mode in which the Committee have dealt, or propose to deal with any such case, may appeal to the Directors, who shall then deal with and regulate the case.

Imposition of fines.

5. The Committee shall have power to impose fines for breach of regulations, neglect of attention to notices, or carelessness in the making up of cash statements or other documents, when delay, loss, or inconvenience has in their opinion, been thereby occasioned A charge may be also made for each time a messenger is sent to obtain corrections of statements, &c., or for sending out corrections of same.

Secretary.

6. The Secretary of the Association shall be *ex-officio* the Secretary of the Clearing House.

* See Rule 17.

7. The Secretary shall have power to act for, and shall be deemed the agent of each party to a contract in receiving and passing on declarations, tenders, notices, money, and delivery orders, but this shall not affect the liability of the parties to each other on their contracts. Secretary to act for parties to contracts.

8. An official receipt shall be a valid discharge for payments made through the Clearing House, and shall be accepted as such by the parties to the contract. Official receipts binding.

9. All moneys which are to be retained by the Clearing House shall be paid into a bank to be nominated by the Directors. Bank.

10. The Committee shall not be responsible for the acts, receipts, neglects, or defaults of any officer of the Clearing House, or of the Association, or of any banker, or of any person with whom or into whose hands any moneys may, in connection with the clearance or adjustment, be deposited, or come, nor for any other loss whatsoever which may happen to any person in connection with any clearance or settlement. Indemnity.

11. Only the form of calls, declarations, tenders, notices, &c., sanctioned by the Committee shall be used, and all parties shall carry out the instructions printed thereon. Form.

12. Any party to a contract, declaration, or tender having no office within a radius of 500 yards of the Corn Exchange, and having no broker or agent authorized to represent him whose office is within such radius,* shall name to the Secretary, as soon as possible, an office within such radius for the reception of all notices and statements (Default Notices excepted) relating to such contract, declaration, or tender. Office for notices.

13. Every party to a contract declaration, or tender shall furnish the Secretary with such information in regard thereto as may be required for the proper conduct of the business of the Clearing House.

14. The Clearing House, to which all necessary communications can be sent, shall be open on all business days from 10 until 5 o'clock, except on Saturdays, when it shall close at 1 o'clock, or so soon thereafter as all tenders shall have ceased to circulate. Hours for business.

15. In all places in these regulations where the word Secretary occurs, it shall be read as Secretary or Acting Secretary, and all sellers and buyers may be represented by their agents. Meaning of word Secretary.

16. The Committee shall have power from time to time to rescind, alter, or add to the Clearing House regulations, whether general or relating to margins, declarations, or tenders, or to any of the matters mentioned in Clause 2, but no such rescission, alteration, or addition shall have any force or effect until confirmed by a majority of a meeting of the Directors specially summoned to consider the same. Power to vary and add to regulations.

SECTION B.

Regulations relating to Margins.

PART I.—GENERAL.

1. Each party to a contract shall have the right to call an original margin at a rate not exceeding 50*l.* on each 5,000 centals of wheat, or Original margins.

* See Rule 2.

25*l.* on each 5,000 centals of corn, upon the deposit by the caller of an amount equal to that called, provided such call be made before 11 o'clock on the next business day after sale; and a further margin may be called from time to time to the extent of any difference between the contract price and the market value.

No original margins.

2. When no original margin has been deposited, calls for margins may be made from time to time, to the extent of one penny per cental more than the difference between the contract price and the market value at the time the call is made.

Market value.

3. For the purpose of calling margins, the quotations of the Committee shall be conclusive as to the market value until 4 P. M. on the next business day, or until any earlier meeting of the Committee at which any quotations shall be fixed.

Time allowed.

4 All margins shall be deposited to the credit of the Clearing House with such bank or banks as may be determined by the Directors and the deposit receipt shall be registered at the Clearing House during the business day following that on which the call is made. Calls made after 5 P M. or on Saturday after 1 P. M., shall be deemed to have been made on the following business day.

Failure to deposit.

5. Should either party to a contract fail to deposit in accordance with this section, the other party shall have the right to close the contract forthwith, either at the market price then current for similar goods, or at a price to be ascertained by re-purchase or re-sale before the expiration of the following business day, and the difference between the contract price and the closing price shall be the measure of damages payable under the contract.

6 No party shall be entitled to interest on any deposit made under this section.

Registration.

7. Unless otherwise stipulated, either party to a contract shall have the right, at any time during its currency, to register it at the Clearing House.

Unregistered Contracts.

PART II.—APPLICABLE ONLY UNTIL REGISTRATION OF THE CONTRACT.

Security.

8. Deposits shall be applicable as security for all contracts made subject to the regulations of this section between the same parties, and current while the deposit remains

Return of deposits.

9. Deposits shall be returned by the Clearing House, as instructed by both parties to the contract.

In case of dispute as to the amount due to each, the matter shall be referred to arbitration as provided by the rules of the Association,* and the Clearing House shall return the deposits in accordance with the award of the arbitrators or the Directors as the case may be.

If either party shall suspend payment, or become bankrupt or insolvent, or be declared a defaulter by the Committee, the Committee shall have discretionary power to pay to the other party so much of the deposits as in their opinion he is entitled to

The Association or the Committee shall under no circumstances be liable for any over-payment made under this clause, and the remedy in

* See Rule 17.

respect of any such over-payment shall be solely against the party to whom such payment has been made.

10. The Secretary shall, as soon as conveniently may be after the deposit receipt is handed to him, notify the party for whose security the deposit is made. Notification.

11. Each party to the deposits shall, as the deposits are withdrawn or transferred, pay to the Clearing House such fees as may from time to time be fixed by the Directors. Fees.

Registered Contracts.

PART III.—APPLICABLE TO REGISTERED CONTRACTS ONLY.

12. For the purposes of registration and the calculation of margins:— Method of calculation.

(*a*) Each 5,000 centals of grain, or 2,500 centals of flour or meal, shall be considered as a separate contract.

(*b*) Margins shall be calculated on quantities of 1,120, 2,240, 3,360, and 4,480 centals, at the rate of 18*l*. per 4,480 centals for every penny of difference in the price, and farthings in proportion, and on other quantities at the rate of 2*l*. per 500 centals for every penny of difference in the price, and farthings in proportion. Margins on quantities which are not multiples of 500 centals other than those named above, shall be calculated on the basis of the multiple of 500 centals next above such quantity.

(*c*) In the calculation of margins, no deduction from the price or allowance of any kind, and no fraction of one penny which is not a farthing or a multiple of a farthing, shall be taken into account, but the exact price shall be stated in registering the contract.

13. The difference between the contract price and the calling price shall, subject to clause 14, be the amount to be deposited in the Clearing House on account of the contract. Differences. First sellers and last buyers.

14. Every party who has bought and sold the same goods, being a member of the Association, or being a firm or incorporated Company entitled to the services of the Association under Clause 2 of Section A of the byelaws, may instruct the Secretary to arrange the contracts in a string, and such party shall appear as an intermediate, and the difference between the buying and the selling prices shall be the amount to be paid by such party to the Clearing House or to be retained by the Clearing House on account of his contracts, as the case may be, and no further action need be taken at future adjustments in regard to such contracts unless the string shall be broken by such party in the manner provided for in Clause 20, or his seller or buyer should fail to deposit. Differences. Intermediate parties.

Any other party may be registered on a string, either as intermediate or otherwise, on such conditions as the Committee may from time to time prescribe. Non-members.

Exception to Rule 9.

15. Notwithstanding the provisions of the printed rules of the Association,* the suspension of payment, bankruptcy, or insolvency of an intermediate party on a string, or his being declared a defaulter by the Committee, shall not enable his buyer or seller to close the contract, provided such intermediate party has paid any difference payable by him on such contract, but if the Committee are satisfied that the seller to or buyer from such party has suffered loss by the contract not being closed, any difference due to such party shall be applied in or towards satisfaction of such loss, the amount of which shall be fixed, for the purposes of this clause only, by the Committee.

Release of original margins.

16. Original margins deposited by intermediate parties shall be released on the deposit of a similar margin by a previous seller or subsequent buyer, as the case may be.

Intermediates may call.

17. Intermediate parties, as well as first sellers and last buyers, may call for an adjustment.

Fees.

18. Each party to a contract shall pay, in Clearing House stamps, such fees as may from time to time be fixed by the Directors.

19. The Secretary shall communicate to all parties the registered number of their contracts, and all contracts in a string shall have a string number in common. These numbers must be marked on all communications relating to the contracts, and, when the declaration or tender is made, must be marked by the first seller on his docket.

Breaking the string.

20. The Committee shall have power to allow an intermediate party to break or alter the course of a string on his making deposits on the basis of the adjustment immediately preceding, or on the basis of the quotations of the Committee for the time being in force, in accordance with Clause 13 or Clause 14, as the case may be.

Tenders in part.

21. In the event of a tender being made in part fulfilment of a contract, the deposits shall be apportioned in an approximate ratio of the fulfilled and the unfulfilled portions of the contract.

Default.

22. Should any party to a contract fail to deposit any amount due by him under these regulations, the Secretary shall report the matter to the Committee, and shall notify such party in writing that he has failed to make such payment, and if the payment be not made within twenty-four hours after such notice (Sundays and holidays as defined in the printed rules of the Association * not to be counted), the Committee shall have power to declare him a defaulter, and to post his name as such in the Clearing House and in the room.

In case of non-payment by a seller, the Secretary shall notify the following seller, who shall thereupon be considered the first seller, and shall make his deposit if any, accordingly.

In case of non-payment by a buyer, the Secretary shall notify the preceding buyer, who shall thereupon be considered the last buyer, and shall make his deposit, if any, accordingly.

Arbitration between first seller and last buyer.

23. Where the terms of contracts are identical, except as to price, all arbitrations shall be held in accordance with the printed rules of the Association † as between first seller and last buyer, or between any intermediate party calling for adjustment and the first seller or last buyer, as the case may be, as though they were contracting

* See Rule 3. † See Rule 17.

parties, and the award made in pursuance thereof, subject to the right of appeal as provided by the printed rules of the Association,† shall be binding on all intermediate parties. Should the terms of contract not be identical, such arbitration shall in like manner be held as between the first seller and last buyer whose contracts are identical.

24. Calls, notices, deposits, payments, releases, and adjustments made between the first seller and the last buyer shall operate as calls, notices, deposits, payments, and releases between all intermediate parties.

Deposits.

25. All amounts deposited under Part III of this section shall (subject to Clause 13) be retained by the Clearing House as security for the relative contracts, or, in case of a string, for all the contracts on that string, until such contracts have been fulfilled or closed, and the amounts shall then be paid over or credited to the parties entitled to receive the same.

Section C.

Regulations relating to Declarations and Tenders.

Declarations and tenders.

1. No declaration or tender shall be for a greater quantity than 5,000 centals of grain, or 2,500 centals of flour or meal. Should any seller desire to declare or tender at one time more than the above named quantities he must do so on separate forms or dockets. If the separate tenders remain with separate last buyers, the tenders in the hands of each last buyer shall be considered as made under a separate contract, so far as regards the quantity deliverable per day under the printed rules of the Association.*

Declarations.

2. Declarations against registered contracts shall be handed by the first seller on the string to the Secretary to be registered and signed over to the last buyer, and shall be delivered to the last buyer within half an hour after being signed over, and on being so delivered the declaration shall, subject to withdrawal as hereinafter provided, be binding on all intermediate parties. The Committee shall have power to allow any party to the declaration to withdraw if at any time before the expiration of the period allowed by the contract for declarations, on his breaking the string and making necessary deposits, in accordance with Clause 20 of Section B.

Declarations against unregistered contracts may be made through the Clearing House by the first seller registering the declaration before delivering it to his buyer. Such declarations may be passed on to successive buyers in accordance with the contract. The last buyer shall deposit the declaration form or docket at the Clearing House on the expiration of the period allowed by the contract for declarations.

Formal tenders.

3. Formal tenders, made with the consent of all the parties concerned, may pass through the Clearing House without a sampling order attached.

Procedure.

4. The party originating a tender shall register it at the Clearing House before delivering it to his buyer. After being registered it shall be passed on in accordance with the provisions of the printed rules of the Association,† but if the contract or declaration against which it is made

* See Rule 10 † See Rule 17.

be registered, the seller* shall hand the tender to the Secretary, to be signed over to the last buyer on the string or declaration, and shall deliver it to such last buyer within half an hour after it has been signed over, and on being so delivered the tender shall be binding on all intermediate parties. The Secretary shall, as soon as conveniently may be, notify the intermediate parties that the tender has been made, specifying all necessary particulars.

Office for notices.

5. If a buyer neglect to name an office for the receipt of declarations or of tenders, as required by the printed rules of the Association† or of notices under Clause 11 of this section, the seller, when he makes a tender, shall be entitled to sign the docket on behalf of the buyer. After signing the docket the seller shall deposit it at the Clearing House, and shall be deemed the agent of the buyer for the receipt of notices and statements issued by the Clearing House (Default Notices excepted), until the buyer shall have named an office for the receipt of such notices under Clause 12 of Section A, and notices under Clause 11 of this section shall be considered as delivered if deposited at the Clearing House.

Divided tenders.

6. If the receiver of a tender wishes to divide it into two or more parts,† he must fill up a sub-tender form for each part passed on, and register the dockets at a Clearing House within fifteen minutes after receiving the original tender, and must deliver them to his buyer or buyers immediately after registration.

The original tender and the divisions shall in all respects be dealt with as separate and distinct dockets, except that when the sub-tenders are cleared at the same time as the original tender it shall not be necessary for the divider to pay the amounts for which his buyers are liable, and that in all cases of divided tenders it shall be incumbent on the first seller on the original docket to give a separate delivery order for each division or sub-divison of his tender; but the divider shall procure the necessary certificates of quantities delivered and other customary statements.

Continued tenders.

7. When the last buyer on a docket wishes to re-tender the same goods in whole or in part under a new docket before the original docket is cleared, he shall use the continued tender form, and if the original docket and the continuation docket be cleared at the same time it shall not be necessary for him to pay the amount for which his buyer is liable; but he shall procure the necessary certificates of quantities delivered and other customary statements. In other respects the continuation docket shall be treated as an original docket.

Procedure on last day of contracts.

8. On the last day of each month the only place for the delivery of tenders against delivery, or shipment and delivery contracts shall be the Clearing House, and it shall be obligatory on all parties interested in such contracts to be there represented from 11 A.M. until all their contracts have been fulfilled, or until all tenders have ceased to circulate. Original tenders, having been previously registered, must be delivered to the first buyer, or to the Secretary,‡ as the case may be, at or before 11 A.M., and

† See Rule 2.

* This applies to every first seller on a string, or registered declaration, whether he be first seller on the tender or not.

‡See Clause 4 hereof.

no tender shall be retained by any buyer for more than five minutes. At the end of the clearing, if any intermediate buyers shall satisfy the Secretary that they have failed to fulfil their contracts owing to the default of their sellers, on application being made not later than fifteen minutes after all tenders have ceased to circulate, the applicants shall be supplied with special forms of tender, which they shall pass on to their buyers, by delivery at the office of the buyers or their brokers, or by delivery to the Secretary, as the case may be, not later than half an hour after the circulation of all duly originated tenders has ceased, and such special tenders may then be passed on to successive buyers, by delivery at the office of the buyers or their brokers, or by delivery to the Secretary, as the case may be, until 3 o'clock, or such later time as the Secretary may, in case of need, fix, no buyer being allowed to retain the same for more than fifteen minutes. In case of a ring, formal tenders shall pass.

This clause applies also to the last day of the currency of any delivery contract.

Registration fees.

9. All parties to a tender shall pay, in Clearing House stamps, such fees as may from time to time be fixed by the Directors.

Return of fees.

10. If the goods tendered be rejected, the first seller shall pay to the Clearing House the equivalent of one tender fee for each party to the tender, not exceeding in all the equivalent of five fees, and all parties who have paid their tender fees by Clearing House stamps affixed to the docket shall have the fees returned to them provided they apply for the same during the hours fixed by the Committee, and within one week after receipt of notice of rejection, and all parties whose tender fees are included in a registration or declaration fee shall be entitled to pass a re-tender without fee.

Rejections and arbitrations.

11. All notices of rejection of goods tendered, and all notices by the last buyer claiming arbitration on goods tendered, shall be handed, before 11 A.M. on the business day next following the day of tender, to the Secretary for the purpose of being signed over by him. The first seller shall be deemed to have accepted the rejection unless he shall, before 3 P.M. on the business day next following the day of tender (or, if such business day be a Saturday, then before 1 P.M.), have handed to the Secretary, for the purpose of being signed over by him, a notice claiming arbitration and naming his arbitrator; and should the last buyer fail to hand to the Secretary, for the purpose of being signed over by him, a notice naming his arbitrator before 11 A.M. on the second business day following the day of tender, the matter shall stand referred, upon application by either party, to arbitrators to be forthwith appointed in the manner provided by the printed rules of the Association* in case of failure by a party to appoint an arbitrator.

All notices given under this clause must, within half an hour after being signed over by the Secretary, be delivered to the proper party, and on so being delivered shall be binding on all intermediate parties.

Arbitration between first seller and last buyer.

12. Where the terms of contracts are identical, except as to price, all arbitrations shall be held in accordance with the printed rules of the Association* as between first seller and last buyer, as though they were

* See Rule 17.

contracting parties, and the award made in pursuance thereof, subject to the right of appeal, as provided by the printed rules of the Association,* shall be binding on all intermediate parties. Should the terms of contract not be identical, such arbitration shall, in like manner, be held as between the first seller and last buyer whose contracts are identical.

13. All payments by the first seller to the last buyer, or out of moneys retained by the Secretary under Clause 23, made in respect of allowances under any award in pursuance of Clause 12, shall operate as payments and settlements between all intermediate parties.

Tenders rejected after expiration of time.

14. Where the terms of contracts are identical, except as to price, and a tender has been made in due time, but such tender has been decided by arbitration to be not in accordance with the contract, and the period specified in the contract for tenders has expired, the goods shall be invoiced back by the last buyer to the first seller at the price of the last business day of the said period, together with such penalty (if any), not exceeding 5 per cent. on such price, as may be decided by arbitration, and all intermediate parties shall settle their differences as if a valid tender had been made.

First clearing.

15. The Secretary shall fix a time for the first clearing immediately on receiving notice from the last buyer that he is prepared to make payment and take up his delivery order. Two hours' notice of such clearing shall be given to all parties interested, but the date shall not be later than that provided by the printed rules of the Association.†

16. The first seller shall in all cases hand to the Secretary a delivery order for the goods at or before the first clearing.

At the time fixed, the last buyer shall present his deposit receipt for the amount of his invoice, and all intermediate parties who have differences to pay shall pay the same, or present their deposit receipts for the amounts payable, any deposits made under section B being allowed for. The Secretary shall then hand the first seller's delivery order to the last buyer, who shall give in exchange his delivery order to be retained in the Clearing House.

17. When goods are tendered with the word "about" preceding quantity, payments shall be based provisionally on the quantity named.

Default (see Association Rule IX).

18. Should any party to a contract, being an intermediate party, fail to pay his difference, or being last buyer fail to pay his invoice amount, the Secretary shall report the matter to the Committee, and shall also notify such party, in writing, that he has failed to make such payment; and if the payment be not made within twenty-four hours after such notice (Sundays and holidays, as defined in the printed rules of the Association ‡ not to be counted), the Committee shall have power to declare him a defaulter, and to post his name as such in the Clearing House and in the room.

In case of non-payment by an intermediate party the Secretary shall notify the seller to and the buyer from the intermediate party, and the seller and buyer shall each deposit the whole difference unpaid at the time specified in the notice. Such deposits shall be adjusted by the Committee in the proportion due from the seller and the buyer respectively.

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* See Rule 17. † See Rule 8. ‡ See Rule 3.

In case of non-payment by a last buyer the Secretary shall notify the preceding buyer, who shall pay his own invoice amount at the time specified in the notice.

19. The amount due to the first seller shall be retained by the Clearing House until delivery of the goods, but he shall, subject to the provisions of Clause 23, be entitled to receive payment on account as delivery proceeds, such payment being calculated on the quantity delivered during the preceding day, as certified by himself and the last buyer. Payments to first seller.

The amount due to intermediate parties shall, unless good reason to the contrary be shown, be paid to them not later than six business days after the first clearing, and if the statement of actual weight delivered be not then in the hands of the Secretary, settlement for any difference between the quantity named on the tender and the quantity finally delivered shall be made between first seller and last buyer on the basis of the market value of the goods on the third business day after the tender, and each tender so settled shall be considered as made under a separate contract. Intermediates' clearing.

20. The first seller shall not be entitled to interest on cash deposited until the expiration of three business days from date of such deposit, but after that time the last buyer shall pay interest to the first seller at the rate of 5 per cent. per annum until the money is paid over, unless, in the option of the Committee, the seller has been in default. Interest on deposits.

21. Intermediate parties shall not be entitled to interest on differences due to them, unless final settlement be delayed beyond the tenth business day after the day of tender. If the final settlement be so delayed the first seller and last buyer shall be jointly and severally liable to intermediate parties for interest, to be reckoned as per Clause 20, on the differences which such intermediate parties are entitled to receive, together with such other damages as the intermediate parties may prove to the satisfaction of the Committee. The amount of such interest and damages shall be deposited in full by both first seller and last buyer, together with such fee as the Committee may charge for the investigation, and the deposits shall be adjusted, in the proportion due from first seller and last buyer respectively, by the Committee.

22. A statement showing actual weight delivered, and signed on behalf of last buyer and first seller, shall be handed to the Clearing House within three days of completion of delivery, when a final clearing shall be called by the Secretary. Final clearing.

23. When the last buyer has claimed arbitration, but such arbitration cannot immediately take place owing to the proper standards not being made up, or other sufficient cause, the last buyer shall direct the Secretary to retain out of the amount due to the first seller a reasonable sum (to be fixed, in case of need, by the Committee) to be held as security for any allowance which may be awarded, but all intermediate parties shall receive payment of their differences in full. Delay of arbitration.

24. When the goods tendered are awarded to be invoiced back to the first seller, but the price at which they are to be so invoiced stands over, a provisional settlement shall be made, in accordance with the printed rules of the Association,* at a price to be agreed upon, or, in case of need, to be fixed by the Committee, and the first seller and the last buyer shall each, Provisional settlement.

* See Rule 8.

on the application of any party to the tender, deposit a reasonable sum (to be fixed, in case of need, by the Committee) to be held as security for any difference between the provisional settling price and the price at which the goods are invoiced back; but all intermediate parties shall receive payment of their differences in full.

5.

The Liverpool Corn Trade Association, Limited.

Liverpool Refraction Standard.

Resolution adopted 21st March 1888, as amended 4th July 1888:—

"That the words 'Liverpool Standard' as applied to Bombay wheat shall mean,—

"(*a*) In the case of Choice White Bombay, not less than 93 per cent. of soft white club wheat, not more than 5 per cent. of soft red and hard wheat, and not more than 2 per cent. of dirt, seeds, and grain other than wheat;

"and—

"(*b*) In the case of No. 1 White Bombay, not less than 85 per cent. of soft white club wheat, not more than 13 per cent. of soft red and hard wheat, and not more than 2 per cent. of dirt, seeds, and grain other than wheat."

Appendix B.

Memorandum by MR. CHARLES WHITEHEAD, *Agricultural Adviser to the Privy Council, as to the introduction of Insects injurious to Corn and Corn Crops in Wheat imported from India.*

Mr. Whitehead's memorandum on introduction of pests in Indian wheat cleaning.

It is well known that the wheat that is imported from foreign countries is frequently brought to Great Britain in a very dirty state, and containing other seeds, dirt, and much heterogeneous rubbish.

In some cargoes arriving from Australia, Russia and India the condition of the wheat in these respects has been particularly bad.

The presence of other seeds, dirt, bits of chaff, straw and rubbish is in many cases due to carelessness in screening the wheat, or from the want of any screening at all, when it is taken direct to the ports from the "godowns" or granaries, or from the village pits where the wheat is stored and covered over with earth.

There appears to be no Government inspection of wheat in India. In the United States officers are appointed in every State to inspect and "grade" wheat, according to its quality and cleanness.

But, besides that which may be termed a more or less natural dirty state from insufficient screening, or from no screening at all, there is a practice prevalent in India of deliberately mixing dirt, rubbish, damaged seeds, as linseed and rice, with clean wheat, to add to its bulk.

This causes much loss to wheat importers and merchants, and millers, necessitating the employment by these last of costly machinery.

Not only this, but the foreign matter mixed with wheat imported from India into this country serves as a medium for the wholesale transportation of insects injurious to crops.

From the cleanings of Indian wheat several categories are formed at the flour mills.

Straw. One consists of short pieces of straw of from 1 inch to 2½ inches long, with pieces of wheat ears. This is sold for litter, and is distributed among various farms in the neighbourhood of the mills. In this straw the most dangerous corn insects might be introduced, insects of the type of the Hessian fly, which was without doubt brought into this country in this way; and of the type of the *Isosoma hordei*, the "joint worm," whose appearance in Great Britain is feared by agricultural entomologists.

Screenings. Another comprises light and misshapen grains of corn with weed seeds, known in this country as "screenings," and which ought to have been taken out of the bulk by the Indian producers. This is purchased for pigs and for chickens' food, being therefore scattered over the face of the land.

Weevils. In this corn, weevils especially, and other insects may easily be conveyed. It is well known that weevils are most destructive to wheat and other grain in India. It is also equally well known that they are brought over to British ports and granaries in abundant quantities with Indian wheat.

One species of weevil, the *Calandra Oryzæ*, the rice weevil, does enormous harm to wheat in Indian granaries and to wheat while it is being transported in vessels to this country.

The admixture of dirt, seeds, and rubbish causes the wheat to heat, which of course is detrimental to its quality, and at the same time causes the weevils to propagate unusually and to materially damage it. Sometimes the cargoes of wheat that have heated are nearly alive with weevils, entailing enormous waste and heavy losses upon importers.

This loss continues when the bulk is taken to granaries or warehouses, while the heat is still evolved, and the weevils revel in it.

According to estimates furnished by Messrs. Ralli, the well known Indian wheat shippers, the amount of loss occasioned by weevils is put at an average of 2½ per cent. Taking the value of wheat exported at 6,000,000*l*, the amount of loss due to this insect in exported wheat alone equals 150,000*l*.

Another weevil, the *Calandra granaria*, closely allied to *Calandra oryzæ*, is also brought over with Indian wheat. This weevil is known in British and other European granaries, but it is presumed that the heat and surrounding circumstances of cargoes of Indian wheat favour its development and stimulate its powers of destruction. As it breeds freely in this country the danger of its distribution is very great.

Besides the actual money loss occasioned by these weevils, it is stated that the flour made from wheat much infested by them is injurious to health. Mr. E. C. Cotes,* the first Assistant to the Superintendent of the Indian Museum at Calcutta, asserts this, maintaining that "the

* See "Notes on Economic Entomology," No. 1. A preliminary account of the Wheat and Rice Weevil in India, by E. C. Cotes, Calcutta, 1888.

weevils contain certain vesicant properties which are known to be powerful irritants to certain organs of the body, even in extremely minute doses. And in the "American Entomologist" it is recorded that *Calandra granaria* has been successfully used as a substitute for cantharis in blisters.

Dirt. With regard to the dirt in Indian wheat, which is described as small hard lumps of dirt and clay, it is sometimes absolutely necessary to wash and soak the bulk of wheat to soften the lumps. Little flies are often noticed coming from the wheat thus treated. These flies may or may not belong to injurious species, but it is clear that flies are introduced in this manner, and insects of this description are among the most formidable enemies of many kinds of crops.

Most serious danger may arise to the crops of this country, and must be apprehended, from the insects that can so easily be brought into it with imported grain from India as well as from other countries.

The ravages of insects upon crops of all sorts in all climes increase year by year. New insects are continually observed by the perplexed cultivators in every part of the globe. The facilities of international intercommunication have widely disseminated species of insects. In this country economic entomologists are always expecting some fresh arrival, some new insect scare, and they join always most heartily in any practical representation that may be made to the Government to take steps to prevent the introduction of new pests. Realizing completely the danger to be feared from the present system of importing wheat, especially from India, they must hold that it is essentially important that the "dirt, rubbish, seeds, and short straw," perfect vehicles for destructive insects, should be left in India.

Appendix C.

Letter from W. GALLON, *Esq., Assoc. M. Inst. C.E., to Sir George Birdwood, dated Sheffield, 2nd May 1889.*

Letter from Mr. Gallon to Sir G. Birdwood. In submitting the result of personal experience and observation in India with regard to the dirty condition in which Indian wheats are exported, to be intelligible, it is necessary to begin at the beginning, and to traverse the whole subject, though no doubt much that follows is merely a repetition of facts already in your possession.

There are two kinds of impurities found among Indian wheat, *viz.*:—

1. Different varieties of grain and smaller seeds, such as barley, gram, rape, linseed, &c.
2. Dust, small pellets of earth, or clay, and small stones.

The "ryot" or cultivator is entirely responsible for the presence of the first of these, and generally to some extent for at least a portion of the second.

Mixed crops. In order to ensure a crop of some description, he deliberately sows a mixture of wheat, gram, and perhaps several other kinds of seeds, in the hope and belief that if the season should turn out unfavourable to wheat growing, it may be favourable to some one or other of the mixture of seeds sown.

The mixed seeds grow up, ripen, and are gathered in and threshed together. As the "ryot" has no mechanical appliances for winnowing and cleaning, the primitive method of letting the grain and chaff fall from a sieve in the wind fails to separate and remove the gram and other foreign seeds from the wheat.

A portion of the earth and small stones present is due to the mode of threshing in use in India from time immemorial.

Threshing. A flat space is chosen for a "threshing floor" in the vicinity of the gathered and stacked grain, this selected area is plastered over with mud, which is trodden, beaten, and dried by the sun, to a tolerably hard even surface.

A stake is driven into the ground in the centre of the prepared floor. Round the stake on a circular area, varying in diameter with the number of bullocks employed, the wheat as taken from the fields is spread to a depth of about two feet, three, four, or more bullocks connected to each other are driven abreast in a circle over the wheat so spread, the inner bullock being usually attached by a rope to a ring or noose, which revolves on the stake.

In this way the grain is released from the ear, without being damaged, and the straw is crushed, or bruised and broken, into what is called "bhusa" or into what the "ryot" believes to be the only condition in which it is fit to be given to his bullocks to eat.

The prepared floor gets broken up, more or less, during the threshing process, and in taking up the grain, dust, small pellets of earth or clay, and small stones, get taken up along with it. Winnowing in the wind, however carefully done, though it may remove the dust, cannot entirely eliminate the small stones, and small pellets of earth or clay thus taken up.

Storing. A further source of admixture of dirt is found in the storing of wheat in pits, resorted to in India. When prices are low the "zemindars" who can afford to wait for a probable "rise" in the market may decide to store their wheat for a time. This is done in the following way:—

A hole eight or ten feet deep, and about five or six feet in diameter, is dug in a carefully selected suitable place, this is lined with chaff or "bhusa," and the wheat put into it, and covered up, first with chaff or "bhusa" and then with earth; the manner of storing is in fact almost precisely similar to the way in which potatoes are stored in this country, only the pits are deeper.

It is, of course, impossible to remove the grain from a pit of this description without some earthy impurities being added to it, and it is chiefly while stored in the manner described that Indian wheats get damaged by insects and become "weevilled."

The smaller cultivators are, however, much too poor to wait for a rise in prices, indeed in many cases their wheat crop is mortgaged to the local "bunniah" before it is gathered in from the field.

Fraudulent admixture of earth. So far the introduction of a variable proportion of the foreign matter found among Indian wheat is a natural and innocent consequence of the "ryot's" endeavour to ensure a return for his labour, together with possible carelessness as to the condition of his land, and the result of his primitive threshing, winnowing, and storing arrangements.

Any further addition of dirt, whether such addition be made by the "ryot" or by the "bepari" or middleman, is due to the premium placed on dirty wheat by the system or basis of purchase which buyers for the European market have adopted.

Refraction system, its effects.

It is assumed by the export houses in India that all Indian wheats contain a minimum of 5 per cent. of foreign matter, or, as it is called, "refracts" 5 per cent. *However paradoxical it may appear, it cannot be disputed that, in consequence of this fixed minimum "refraction," the "ryot" is a loser if he sells clean wheat, and must also lose by selling dirty wheat.*

The exporting buyers and the "bepari" or middleman, by means of this 5 per cent. "refraction," play a "heads I win, tails you lose" kind of game with the native cultivators.

In effect, they are mulcted in a penalty increasing up to 5 per cent. the nearer their wheat approaches to a clean condition.

That is, other things being equal, the cultivator who sells wheat with a less percentage of dirt mixed with it than the fixed minimum loses the difference between 5 per cent. and the actual percentage of dirt present, or, in other words, if there is only 1½ per cent. of dirt in the parcel of wheat which he sells, he loses 3½ per cent.

Practically, the custom of buying subject to a fixed minimum "refraction" has established a standard of impurity, which there is neither fraud nor rascality in adulterating to, as, should an analysis of samples show the "refraction" to exceed 5 per cent., a deduction is made *pro ratâ* from the amount to be paid to the seller.

It would be placing the "ryot" much lower in the scale of intelligence than he actually is, to suppose him incapable of comprehending that it is he who pays the cost of carrying 5 per cent. of foreign matter mixed with his wheat by rail and steamer from India, and up to the point of delivery into the hands of the miller, and also for the separation and removal of such foreign matter by washing and screening. But while it continues customary to buy on a fixed percentage of "refraction," it is clearly to his interest to supply 5 per cent. of dirt.

As excess "refraction" is deducted from whatever price may have been agreed on between buyer and seller in India, there does not appear to be any good reason for having a fixed standard of impurity.

If the deduction for impurity was made variable with the percentage found, the direct inducement to adulterate would be done away with.

A great reduction on the quantity of foreign matter now found in Indian wheats could undoubtedly be made by the "ryots" sowing clean seed wheat and exercising greater care in threshing and winnowing it, but so long as the present modes of threshing and storing continue, absolutely clean wheat cannot be produced.

Supposing it possible to remove all particles of dust and dirt, there would still remain the question of its being necessary to wash Indian wheats, because of possible defilement from the urine and droppings of the cattle employed in threshing, or, more correctly, treading it out.

The mixing of white and red varieties of wheat together is not an unimportant matter as regards the value and general suitability of Indian wheats for both stone and roller mills. But whether admixture is solely due to the sowing of mixed seed wheat, or to this coupled with careless-

ness on the part of the "bepari" or middleman, its tendency is to lessen values, and as there is no compensating advantage, such as payment for dirt affords, it may be regarded as a minor evil calculated to work its own cure.

The continuance of an objectionable tax on the Indian wheat export trade is necessarily a hindrance to the further development of India's vast resources as a wheat producing country, as yet only to a small extent utilized.

The tax is discreditable to both parties most directly concerned, that is, to shippers and cultivators, but in a greater degree to the former than to the latter, since they are clearly chargeable with having introduced and fostered it for their own possible advantage.

It has been shown that it is impossible for the "ryot" to benefit by it. That being so, it cannot be fair dealing, or the loss would not thus inevitably be all on one side.

If the "shipper" incurred a risk of loss from shipping dirty wheat, it is reasonable to suppose that his influence would be exerted to remove such risk.

The writer's experience, when engaged in an endeavour to introduce steam threshing machinery into the Bombay Presidency and Central India in the early part of 1885, showed that "shipping houses" could not be induced to take any active part, or make any effort whatever, to promote the export of clean wheat from India.

Collectively, and as an abstract thing, merchants expressed warm approval of the principle of exporting clean wheat.

The Bombay Chamber of Commerce passed resolutions eulogizing and approving samples of clean wheat threshed by the steam threshing machine, and submitted to them by the Director of Agriculture (Mr. Ozanne), and condemned the shipping of dirty wheat to Europe. But, when it came to taking a step out of the customary groove, when one of the largest "exporting houses" was asked to buy a parcel of absolutely clean wheat, threshed by the steam threshing machine in the Nasik district, the reply was a courteous refusal to purchase, on what was probably the most convenient and plausible pretext at hand, that "they never bought grain except where they had an agent established."

One member of an important "shipping house" in conversation with the writer, said frankly, "Why should we trouble ourselves on this matter? We do not come here to do business for the benefit of the 'ryot,' but for our own benefit, and, if we can do business to our own satisfaction and profit as things are, it is no concern of ours that the 'ryot' does not secure a fair price for his grain."

Selling "forward."

The custom of "selling forward," that is, selling a shipment of wheat in England before it is bought in India, and the method of adjusting prices on averages of samples adopted in this country, are both difficulties in the way of the exportation of clean wheat from India, but they could probably be more easily surmounted than the self-interest, apathy, and indifference of Indian wheat exporting firms.

Reforms.

The reforms necessary before any reduction can be effected in the quantity of dirt shipped with Indian wheats are,—

1. Reform of trade customs.
2. The "ryot" must sow clean wheat in clean land.

3. The "ryot" must adopt some method of threshing and cleaning his wheat which will not necessitate its being brought into contact with the earth.
4. An improvement must be made in the mode of, or in the arrangements for, storing.

In trade customs.

A reform of trade customs should be the first step to be taken, and this should begin by the repeal of the fixed minimum "refraction."

Wheat is purchased in India by measure, and sold in England by weight, and as earth and stones are, bulk for bulk, much heavier than wheat, the shipper obtains a slight advantage here also from "dirt."

In this connection it may be mentioned that the adoption of one standard of weights and measures throughout India would simplify and facilitate business. At present there are three or more.

There can be no doubt that, given an inducement to supply clean wheat by the offer of a higher price, that is, by the purchase of wheat on its merits—the only fair basis of purchase—clean wheat would be forthcoming.

In threshing and cleaning.

Though the "ryot" may truthfully be described as foolishly conservative in many things, adhering to the manners and customs of his forefathers, with a pertinacity and determination which might often be more usefully directed, he will adopt an improvement readily enough when he sees clearly that it is to his interest to do so.

One of the principal reasons for his continuing to tread out the wheat on a threshing floor by means of bullocks is that, as already stated, he believes there is no other way in which the straw can be made into "bhusa" or fodder. He might, however, be shown that the straw could, if necessary, be trod into "bhusa" after the removal of the grain by some such means as are now in use for threshing rice.

Winnowing and cleaning machinery would, undoubtedly, enable the "ryot" to produce a better sample of grain, but such machinery is not indispensable to the obtaining of clean wheat from India. Provided that clean seed wheat is sown in clean land, and that the resulting product is not afterwards brought into contact with the earth during threshing or cleaning, or stored in pits of the description at present in use, it is quite possible for the "ryot" to produce clean wheat with but a small and comparatively inexpensive addition to his present primitive appliances.

If the wheat was kept from contact with the earth by a sheet or sheets, made from the material used for "gunny bags," during the threshing and cleaning processes, one of the foregoing conditions would be complied with at a very small cost to the "ryot."

The general introduction and use of steam threshing machinery in the wheat growing districts of India is put forward as a solution of that part of the problem in hand connected with threshing and cleaning.

While there is much to be said in favour of the employment of steam threshing machinery in India, its introduction must necessarily be gradual, and to wait for its effect would be to postpone the desired improvement to an indefinite period.

The opinions and prejudices of the "ryot" are probably the least obstructive of the many difficulties in the way of a general introduction of steam threshing machinery into India.

Objections raised by the "ryots" to the working and to the result of the working of a steam threshing machine in 1885 were such as could be readily overcome.

The fact that the threshing machine did not bruise the straw and make it all into "bhusa" or fodder was the main objection raised against it. A good deal of importance was attached to this alleged shortcoming, and it was urged that the cattle could not eat the straw and chaff as produced by the threshing machine.

Believing the "bhusa" or fodder obtained in the ordinary way to be more or less tainted and defiled by preparation, the writer determined to submit the question to the bullocks themselves, as being the best judges of the qualities of "bhusa." Some broken straw and chaff produced by the threshing machine was therefore laid side by side with about an equal quantity of "bhusa" trodden and bruised by bullocks in the usual manner. Several bullocks were driven near the heaps and allowed to choose for themselves. In every instance, without exception, the bullocks, after sniffing at both the "bhusa" and the straw and chaff produced by the threshing machine, showed their preference for clean food by feeding greedily on the latter, and rejecting the native "bhusa." The "ryots" who witnessed this appeal to the discrimination of the bullocks were manifestly surprised and disappointed that their opinions were thus contradicted, and had but few remarks to make on this point thereafter.

It must, however, be acknowledged that, in consequence of the hard brittle nature of most of the wheat straw grown in India, crushing and bruising renders it more suitable for fodder,—less liable to cause injury to the animal's mouth and throat.

Wheat straw is not always used as fodder in all the wheat growing districts of India, but it is resorted to when other more desirable fodder is wanting.

When necessary, the attachment of a straw crushing and bruising apparatus to the threshing machine removes all possible objection as to the unsuitability of the straw produced by it for fodder.

The only other sensible objection against the working of the steam threshing machine was that a small proportion of the grain was chipped.

Owing to the extremely dry, hard, brittle nature of the wheat straw, already alluded to, and the dry hard condition of the wheat, this defect will be found very difficult to entirely eliminate.

Steam threshing.

Superstitious ideas respecting the introduction of any, to the natives, newfangled inventions would be outweighed by a clear proof of pecuniary advantage to be reaped from their use, and the same may be said with regard to the objection that the "ryot" would have no employment for himself, his family, and his bullocks during the period of the year now occupied in threshing and cleaning his wheat.

Supposing the "ryot's" personal objections to be entirely met and overcome, however, the only way in which the vast majority of the native cultivators could obtain the use of a set of steam threshing machinery is by hiring, or by some form of combination to purchase, which has yet to be taught them, as the first cost is far beyond the resources of the individual "ryot."

Roads which would permit a set of steam threshing machinery to be drawn by bullocks across the country, have in many parts yet to be made, and any attempt to take a steam threshing plant, of the smallest size and capacity at present made, down a grade of moderate inclination, would probably be attended with disaster, if bullocks were employed.

Facilities for loading or unloading heavy unwieldy articles, such as portable steam engines and steam threshing machines, are conspicuously absent from Indian railway stations.

There would undoubtedly be great difficulty and delay attending the execution of repairs to, or renewals of, parts accidentally damaged or destroyed, and the, to the natives, somewhat complicated mechanism of a threshing machine, makes European management and supervision indispensably necessary for successful working.

These, in the opinion of the writer, are much more serious obstacles in the way of a general adoption of steam threshing machinery in India than the personal objections of the "ryot."

The question whether they are too difficult for British enterprise to surmount may be left with those who consider it to their interest to test the matter.

Improved storage.

With regard to the storage of Indian wheat, it is probable that those who can afford to hold their wheat for a "rise" in prices could also afford the comparatively small expense of making their storage pits clean and vermin proof, by lining them with concrete, bricks, or stone.

Wheat is sometimes damaged in course of transit by exposure to wet in consequence of no provision having been made at railway stations for temporary storage. This is a matter for the Railway Companies to remedy. If sufficient facilities are given for the examination of consignments at the railway termini, and the Railway Companies mulcted in penalties for failure to deliver in good condition as received, the needful covered, and in every way efficient, accommodation will soon be provided.

Reform in trade practices essential.

Turning to the attitude now assumed by the Indian wheat exporting houses respecting the exportation of clean wheat, they practically say,—"We have tied our own hands and those of the 'ryots' in this matter, and we cannot untie them without extraneous aid, or the assistance of the Government." But, while the influence, and, if necessary, the power of the Government of India may be wisely and usefully exerted at a later stage, it does not appear that Government interference is required for the initiatory proceedings of the desired reform, unless it should be needful to compel the abolition of the premium on impurity.

If a consideration of the question in all its bearings by the Indian Council, and by representatives of the various corn trade associations, should result in prompt, decisive, and efficient reforms in the mode of appraising values, and the form of purchase of Indian wheat in this country, export houses in India could no longer make the excuse they now appear to rely on as a sufficient reason for continuing the 5 per cent. minimum refraction, *viz.*, "that it is necessary owing to the action of merchants in this country."

Wheat Syndicate suggested.

A trade custom which gives a manifest advantage to the most influential party may, however, be expected to die hard, and it is very questionable whether a free, spontaneous, and immediate reform in the required direction by shippers of Indian wheats may be anticipated, as a result of the expression of desires and opinions of millers and others in this country, however unanimous they may be.

In the event of it being found impossible to induce export houses to forego the advantage which a 5 per cent minimum "refraction" gives them, the formation of a Syndicate to purchase and export clean wheat from India is the only way in which the question can be practically dealt with.

Such a Syndicate, if supported loyally by the millers in this country, and backed up by the influence and assistance of the Indian Government, to the extent of giving the "ryot" facilities for obtaining clean seed, and kindly counsel through their officials, could not fail in effecting the desired improvement.

Legislation.

As the adulteration of wheat cannot be held to be fraudulent, being practically legalized by the trade custom, it is difficult to see how any legislative enactment could be framed of a positive or prohibitory character to deal with it.

It might be found possible, however, to support a Syndicate for the purchase and exportation of clean wheat by passing an Act of a negative character, which would make trading in dirty wheat illegal, and, therefore, contracts made in respect of such wheat not binding nor recognized in a court of law.

In any case, no pressure should be put on the "ryot" to produce clean wheat until he can get a fair price for it. Then, in all probability, the necessity for coercion in any form will have passed away.

Appendix D.

From Mr. Harrison Carter, *dated 10th May 1889, to the Editor, "Beerbhoom's Evening Corn Trade List," dated 10th May 1891.*

Letter from Mr. Harrison Carter.

I cannot think the National Association of British and Irish Millers will submit to have the conditions under which wheat is to be shipped from India (except to the port of Liverpool) dictated to them by the London Corn Trade Association. The Hon. J. Forbes Adam says, "The fault lies not at the door of Bombay exporters, but with millers, buyers, and Corn Trade Associations in England," and he adds, that "the Bombay Chamber of Commerce resolved to request the London and Liverpool Corn Trade Associations to fix the refraction on all wheat sale contracts at not over 2 per cent." Liverpool agreed—London declined; and the latter followed this up with a report at the India Office meeting, which I felt bound to denounce as a most uncompromising document, and which is really the most obstructive and no-surrender manifesto which, I should say, was ever issued from a public commercial body called upon to assist in the improvement of a great national commercial interest. I did not think before that an association could be found in England whose patriotism was so entirely confined to their pockets. I mentioned at the meeting that some of the largest firms in Ireland and England used very little Indian wheat, and several millers noted that a vast number of small millers *cannot* use it. The Government reports from millers prove this incontestably, but, notwithstanding this, I have

Opinion of English millers.

failed to find one single sentence in the London Association's circular which admits willingness to co-operate in assisting the millers. It is suggested in the Government report that Indian wheat was probably sent to Mediterranean ports in better condition than to England, but I doubt this. In Marseilles I know that, the climate being dry and hot, washing is one of the ordinary operations of the wheat-cleaning system on all wheats, and therefore all mills have the necessary washing and cleaning plants; but the manufacture of pure semolina is a large trade there, and some sorts of Indian wheat are found very suitable, but in the very best samples of semolina I found traces of dirt and stone. This illustrates a fact well known to millers, that, after the "break flour," the next to be damaged is the highest qualities. Though I went to Lord Cross's meeting as a member of the London Chamber of Commerce, I had not intended to speak but, whilst sitting as a listener, a gentleman whom I do not know came and asked me to reply *for* the London contingent, as the other side had had it nearly all their own way I did my best (though badly) to reply *to* them, and I wish I could have more forcibly assisted the northern corn traders and the millers. My knowledge of the milling trade enables me to say, without any chance of being contradicted, that almost unanimously the millers object to the dirt in Indian wheat, and the same, I believe, applies to the milling engineers. I believe they would thoroughly approve contracts being based on only 2 per cent. refraction. It is stated in the Government report that what Messrs Ralli call the 5 per cent. *stuff* (how clearly they know the name to give it) is partly made up of dirt and stones *purchased by the native traders, and mixed into the wheat* sold as "fair average quality."

The practice probably was suggested from the fact that the threshing floors are made of dried mud, in which there are also stones. As it will take years to generally introduce the threshing machine, I suggest that an effort should be made to introduce cement threshing floors.

Appendix E.

Letter from MR. SAMUEL SMITH, *dated Victoria Corn Mills, Sheffield, 1st June 1889.*

Letter from Mr. Samuel Smith.

Your report on the impurities of Indian wheat fully confirms the desire of English millers to purchase it cleaned.

But it will be in vain to ask either grower or dealer to furnish it clean unless it is to his advantage to do so.

English millers' objections to buy Indian wheat on terms of "f. a. q.," with dirt clause of 5 per cent. and average sample prepared in London, are manifold:—

English millers' objections to Indian wheat. Government measures.

1. That the grower does not deliver the wheat in marketable condition.
2. That on its passage to England the wheat is being consumed and deteriorated by that abominable pest the weevil.

3. That "average sample" which is to test the quality of delivery is a monthly preparation by the London Corn Trade Association over which the miller has no say.
4. That the "average sample" varies considerably, and affords no criterion to the millers what to expect in succeeding months. Buying this is very much like "pricking in the belt."
5. It is impossible to estimate the loss the English miller suffers by having to extract the weevil from the wheat in his mill, and so get the nuisance on his premises, instead of being extracted by the grower. In some cases this extends to 5*s* per quarter, and on tedious voyages in the hot season the wheat is rendered unfit for making flour.
6. That in cases of arbitration the members of the London Corn Trade Association are the sole arbitrators. Without in any way doubting the integrity of those gentlemen, it is easy to see the miller is placed at a disadvantage; that reciprocity is all on one side.

A miller, who best understands the interest of millers, should form part of the arbitration to protect the buyer's interest.

7. In case of arbitration the miller, however far distant he may reside, is put to the trouble and expense of attending at the port where he bought the wheat, as there alone the arbitration must be held.
8. Indian wheat shipped with 5 per cent. of dirt in it can only be used by those English millers who have adopted costly cleaning machinery to treat it (who do not number one in twenty), thus sadly limiting the demand for Indian wheat. Were the wheat exported clean, its quality being well adapted to the English market, all millers would gladly use it, and thus aid the development of our Indian colony.
9. The practice of adding dirt to the wheat is the most execrable of all. Of this admixture of dirt there is no possible method of ascertaining exactly the "5 per cent." The man who has the hardihood to mix 5 per cent. (or any less quantity), his elastic conscience will not scruple to mix 6 per cent. or more, which frequently proves the case to the miller, who has no remedy. In England there is a law to punish the miller if he adulterates flour; in India there should be a law to punish the man who adulterates wheat.

With its present rude mode of agriculture, India labours under many and serious disadvantages compared with those wheat growing countries who use the best appliances and facilities to lessen the cost of production. The latter could not easily be induced to return to the practice of those primitive times when it was commanded,—"Thou shalt not muzzle the ox that treadeth out the corn."

It is evident that, before India can take her stand on equal terms with other countries to produce wheat for the world's market, much labour and wise forethought will have to be exercised, and abounding

difficulties overcome. Amongst those things that will greatly conduce to this end :—

Government measures.

1. Let Government provide good railway and road accommodation, and as far as possible all other helps for cheap and expeditious transit; also public elevators or warehouses at convenient stations where the farmer can store his grain cleaned, to be properly graded by a Government Inspector, so that he can either sell or keep it, after the practice universally adopted in America. In this way, arbitration (so objectionable to all parties) will be avoided. The wheat having a fixed character will be sold on its merits, on terms alike to seller and buyer.

I have seen in Dalrymple's farm, near Fargo, U. S. A., a wheat field of 12,500 acres cultivated by the plough and mules. The proprietor told me he should reap the whole in 14 days by mowing machines, and thresh and winnow the whole in 28 days, and place it in trucks on the railway to be sent to an elevator at New York properly prepared for sale.

Introduction of steam machinery.

2. Let the farmer be encourged and helped, if possible, to procure and use the best threshing and cleaning machinery, to enable him to send his grain properly cleaned to market. To prove how cleaned wheat will benefit him, take as an example 100 quarters wheat, sold with dirt in to extent of 5 per cent., reduced by better cleaning by the grower to 2 per cent.

	Qrs.
The English miller, or last buyer, receives of cleaned wheat .	97
of dirt, for which he has to pay the price of wheat . .	3
	100

	£	*s.*	*d.*
On this 3 qrs. dirt he has to pay carriage from the sender to the shipping port on an average, say, of 2*s.* per quarter	0	6	0
Freight from Calcutta to English port (20*s.* per ton) on 3 qrs.	0	13	4
From English port to mills in the interior, average (6*s.* 8*d.* per ton) on 3 qrs	0	4	5
And for the dirt itself at, say 25*s.* per quarter, on 3 qrs.	3	15	0
	£4	18	9

Practically, on the 97 qrs., he receives 1*s.* per quarter, which more than compensates for the 10¾ per cent. reported to be lost by selling clean wheat instead of dirt.

	£	*s.*	*d.*
If the wheat was sold at 30*s.* per quarter instead of 25*s.* the amount would be	5	13	9
If the wheat was sold at 35*s.* per quarter instead of 25*s.* the amount would be	6	8	9

Further, from machine threshing compared with bullock threshing the former will secure more and cleaner wheat from the straw (I think by 5 per cent.), and by good winnowing he will provide wheat clean and sweet instead of dirty, and often stale, from the bullock's presence, when the bran or rind of the wheat berry from its spongy nature is liable to absorb offensive moisture, causing the wheat to heat in transit.

If I have correctly estimated the advantage of steam threshing at 5 per cent.,— Advantage of steam threshing.

	£	s.	d.
5 qrs. at 25s. will yield	6	15	0
5 „ 30s. „	7	10	0
5 „ 35s. „	8	15	0

This (or whatever is the correct proportion) will be profit to the farmer, as the time and labour saved will recoup him for the cost of improved means of working.

The difficulties, vexation, and loss inflicted on the English miller by the present tortuous methods of selling Indian wheat would all be obviated by the grower preparing his wheat in a marketable condition, and would more than double the demand for it.

I am well aware that the needed improvements for India must necessarily be of slow and progressive growth. A knowledge of their defects, and how to improve them, must be their first steps to advancement.

Appendix F.

Extract from the Consular Report for the year 1888 on the Trade of the Consular District of Odessa (Russia).

The question of elevators, one of which has been successfully erected at Eletz, in the Government of Orel, at the junction of the Uslovaia-Eletz and the Orel-Verkhovié-Eletz-Griasi Railways, is now being seriously discussed by the Zemstvos, or Provincial Councils, in my district. It is felt that, if steps are taken for the proper storage, conditioning, and sorting of grain at important centres, so that it should be forwarded, as means of transport are available, to the ports for shipment abroad, South Russia will be in a better position to compete with America and India than she is at present. How South Russia is pushing forward in the race of production is proved by the enormous development of the export trade from this port, and even at the end of 1888 only half the year's crop had been exported. The stock then in warehouse was estimated at 3,100,000 tchetverts (2,232,000 quarters), against 1,800,000 tchetverts (1,296,000 quarters) at the end of 1887. Russian wheat trade.

Annex B gives the quantities and values f. o. b. of the several kinds of grain exported during the years 1887 and 1888, showing a very large increase in wheat, barley, rye, and oats, but a falling off in maize.

The average prices f. o. b. during the year were as follows:—

	s.	d.
Winter wheat (Azima)		
Fine quality	28	6
Inferior quality	25 to 27	0 to 0
Spring wheat (Ghirka)—		
Fine quality	27	6
Inferior quality	24 to 26	0 to 0
Rye	16	0
Maize	18	6

The above prices are per Imperial quarter of 480lb.

Barley	13s. per 400lb.
Oats	10s. 6d. per 320lb.

Annex B.—Return of Principal Articles of Export from Odessa during the years 1888 and 1887.

Articles.	1888		1887	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Wheat	1,031,758	6,878 960	605,387	4,090,527
Barley	356,660	1,543,020	263 451	893 139
Rye	216,251	741,437	175,113	7[illegible]8 087
Maize	179,280	982,810	325,969	1,300,383
Oats	60,539	293,040	23,855	83,565
Sugar	42 405	1,156.808	43,703	1,083,840
Flour	18,733	197,445	30,876	396,960
Wool	3,208	228 730	6,185	631,658
Sundry goods	161 628	1,491,920	271,803	2,639,145
TOTAL	2,070,462	13,514,170	1,746,342	11,857,304

Appendix G.

Memorandum of the Council of the National Association of British and Irish millers in reference to the Conference on the Impurities in Indian Wheat, held by invitation of Viscount Cross, G.C.B., Her Majesty's Principal Secretary of State for India, at the India Office, 8th May 1889.

Memorandum of Millers' Association.

The Council is of opinion that it would greatly tend to the increased

consumption of Indian wheat if it came in a cleaner state to this country, and that no good reason exists why it should not do so.

Indian wheat is at present manufactured into flour by a comparatively few millers, who have large mills and sufficient plant of elaborate cleaning and washing machinery to prepare it for use. If it came cleaner it would be purchased by the smaller millers, who cannot now use it on account of its filthy condition.

Imputation of dirt indefensible.

It appears to this Council quite absurd to defend on any grounds the useless waste of labour and money in bringing thousands of miles a considerable proportion of dirt and other impurities, which must be eliminated before the wheat can be ground, and which could be as readily and effectually done at the port of shipment or principal centres of collection in the interior of India.

The amount of dirt in the wheat has, however, another bearing on the question. The impurities largely consist of pieces of earth from the threshing floor, impregnated with offensive animal matter, and this, being packed with the wheat in bags, during the long voyages in close confinement imparts to the grain a taste and smell which is very objectionable, and which cannot be removed altogether by the most elaborate and costly cleaning and washing. There appears to be no good reason why the wheats of India should not be delivered into England of nearly as good flavour and sweetness as from other distant countries.

Views of English millers.

The Council have considered the statements put before Lord Cross by the London Corn Trade Association, and wish to state that they are not at all in accord with them in this matter, nor do they agree that the views of millers are accurately given in the document in question, which is presumably written in the interest of shippers and not of the public. There can be no doubt that the replies from the 510 millers in answer to the questions submitted to them by the India Office fairly represent the opinions, not only of themselves, but of the great bulk of the 8,000 corn millers of the United Kingdom.

It has been argued that millers need not buy on the form of contract issued by the Corn Trade Association, but can purchase on sample on arrival; but, as a rule, millers purchase Indian wheat for forward shipment in order to cover the sales of flour made for forward delivery, and are compelled to use the form of contract or not buy in this way at all. The Indian wheat coming by the Cape is very much purchased for its convenience as "cover," and if the millers so buying are not able to clean it they have to sell on arrival. It is, therefore, of great importance that the contract form should be altered, and the proportion of dirt allowed very much reduced.

Suggestion of Government action.

The Council hopes that the Indian Government will not allow the question to rest until some improvements have been effected, and insist on the wheat being shipped in a cleaner state from the ports of that country, and further trusts that any persons who purposely adulterate wheat with impurities may be dealt with by the criminal law, as the practice tends to injure the quality and flavour of the grain, and to bring into disrepute the produce of a portion of the British Empire, whereby the trade of the Empire is injured, and the grain of foreign countries

obtains an advantage in English markets from causes which are largely preventible.

On behalf of the Council,

R. HARVEY DAW, *President.*

J. H. CHATTERTON, *Secretary.*

61, MARK LANE, LONDON,
15th June 1889.

Appendix H.

1.

Report (No. 1) by McDOUGALL BROTHERS *to the Under Secretary of State for India on Indian Wheat Impurities, dated 22nd August 1888.*

F. A. Q. contracts.

We have carefully considered the memorandum of 1st June 1888 (Appendix A) sent to us, respecting the dirt and impurities in Indian wheats, together with the Proceedings of the Lieutenant-Governor of Bengal, No. 1265, Agriculture (Appendix B).

The forms of contract used in the United Kingdom in the sale of Indian wheats stipulates that the quality shall be of fair average quality (f. a. q.) of that month's shipment, and do not make any mention of a 5 per cent. refraction.

The Corn Trade Association arranges, with Dock Companies and others, to draw samples from each parcel received at the different ports, and from these samples the month's average is then mixed and prepared.

Sales are generally made in lots of 100 tons each, and in shipping, a Bill of Lading is made for each 100 tons, this having been found a convenient quantity.

A very considerable trade is now done in buying and re-selling Indian wheats on the f. a q. basis.

This helps to explain how it is that any parcel of special quality would receive little or no attention. Such parcel would have to be sold by sample, and each buyer would have to inspect and pass on the sample, the first seller would have to seal it, and there would be much trouble and uncertainty if the parcel were sold several times. Thus the objection of the merchants and millers would be to selling or buying each parcel by its own special sample.

If regular supplies of clean wheat could be ensured, there is not the slightest doubt but that they would much prefer, and would gladly pay for, clean wheats

Millers want clean wheat

We have personally inquired of many millers and dealers, and, without exception, they express a desire for clean wheat, some remarking, "Do you not think we should give a less price for Australian wheats if they contained dirt?"

Many of the largest millers have met the difficulty by erecting extensive washing and cleaning machinery, which gives them somewhat of an advantage, and so are willing that Indian wheats should continue as at present, but many millers are prevented using Indian wheats by the

need of such machinery. This, we are informed, is still more the case on the Continent.

During the last year or two special samples of "selected Bombay" wheat have been offered upon the market, and command higher prices than No. 1, Bombay.

They are guaranteed to contain—

94 per cent. of white wheat 4 per cent of red wheat Not more than 2 per cent. of dirt	6*d.* to 9*d.* higher price than No 1, Bombay.
92 per cent. of white wheat 6 per cent. of red wheat Not more than 2 per cent. of dirt	4½*d.* to 6*d.* higher price than No. 1, Bombay.

It is important that different kinds of wheat should as much as possible be kept separate. The admixture of hard and soft, and white and red wheats prevents the miller using each to best advantage. Red wheat mixed with white prevents the white from being used for the finest flours. Hard wheats require damping to a much greater extent than the soft, so that if mixed together one is always either too much or the other too little damped.

Extra dirt in late shipments.

A remarkable point about the exportation of Indian wheats is that shipments of new wheat, *i.e.*, those shipped March, April, and May, are so very superior to those shipped later in the season, *i.e.*, August, September, and October. These latter are often so disappointing to millers who have expected to receive bulks equal to early shipments that it has forced many to decline to deal in these latter shipments, for if the whole of a month's shipments were of low quality there would be no allowance on the f. a. q. terms.

The poor quality of the late shipments may arise from the storing of wheat in pits, some part of the wheat is almost certain to be damaged, and also gets a further admixture of dirt. A remedy for this would be to store the wheat in properly constructed public granaries until required for shipment.

Large seeds, such as gram and peas, are easily removed by sifting, and also the small seeds, such as linseed and rape, but it is almost impossible to separate such seeds as barley, &c., they being about the same size as wheat.

The presence of stones is the greatest difficulty the miller has to contend with, and these are found in the red Bombay and Atbara wheats.

If you think it desirable, we should have pleasure in getting all the different average samples of Indian wheats as received in London, and make a careful analysis and report to you the percentage of all admixture other than wheat.

Summary of results of enquiries into demand for clean wheat.

We do not refer to the means to be employed in separating and cleaning wheats. We keep only to the point you particularly raise, *viz*, Would clean wheat have a better sale than dirty?

The information we have gathered is unanimous on the following points:—

1. Clean Indian wheats are much desired.
2. Extra price would be paid for clean wheats.

3. Clean wheats would cause much increased use
4. Wheats carefully selected should be as near as possible of one sort, being then more valuable than when mixed together.
5. That the practice of mixing dirt and seeds is most detrimental to the practical value of Indian wheats, and urgent steps should be taken against it.

2.

Copy of Contract Form.

London Corn Trade Association.

FORM 1. EAST INDIAN WHEAT CONTRACT.

Entered at Stationers' Hall,
(Revised 2nd January 1888.)

London, 27th April 1888.

**Bought of A. B.*
of Lambeth.

Domiciled in London

Contract form, London Corn Trade.

on the printed rules endorsed on the back of this contract, about 100 *tons of wheat in bags* (2 per cent more or less) say *one hundred tons of Number Two Club Calcutta wheat, to be at time and place of shipment, of fair average quality of the season's shipments when shipped, crop* 1888, shipping, shipped, or to be shipped per *one or more* first class *steamer or steamers* not lower than A 1 in red English 5/6 I I French Veritas, or equal classification in Austrian, Norwegian, Italian, or other equal Register (Greeks and Turks excepted), from *Calcutta, viâ* the *Canal*, shipment made, or to be made, and Bill or Bills of Lading to be dated *during June and/or July 1888*, reckoning provisionally 2,730 Bazaar maunds of 82lb English, equal to 100 tons, at the price of 31*s.* 4½*d.* less 2 per cent., say *thirty-one shillings and fourpence halfpenny, less two per cent.*, per 492lb net delivered, including freight, as per Bill or Bills of Lading, and Insurance to London, and including the usual double gunny, or double Borneo Company's bags, or bags equal in value thereto. No charge for Dunnage. To discharge as customary, and as per Bill or Bills of Lading. Payment, cash in London, within seven days from the day on which Invoice is handed, less discount for the unexpired term of *three* months from date of Bill or Bills of Lading at Bank rate of the day on which payment is made, but not less than 5 per cent. per annum, in exchange for Bill or Bills of Lading and Policies of Insurance (free of war risk) effected with approved underwriters, but for whose solvency sellers are not responsible.

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* The portion of the above form filled up in writing is shown in *italics*.

The Company in whose dock the ship discharges shall be ordered to weigh at buyer's expense one sound and undamaged bag in every 20 as they rise from ship or quay, or every bag, at buyer's option, and two in every 100 shall be emptied to ascertain the tare (the whole of said bags being weighed together), and the Dock certificate shall settle the weight for final invoice. Should buyer elect to have one bag in every 20 weighed for average, then slack bags to be weighed separately. All sea-water damaged and sweepings to be rejected.

Seller to pay our brokerage of *half* per cent., on the gross provisional invoice amount, contract cancelled or not cancelled.

Seller to give policy or policies of insurance for 2 per cent., over the net invoice amount, plus the 2½ per cent. on the gross invoice amount, and any amount over this to be for seller's account. All average to be for seller's account, buyer in such case to return policies to seller and to furnish him with the usual documents required by average adjusters for preparation of average statement on settlement of final invoice.

In case of prohibition of export, blockade, or war preventing shipment, this contract or any unfulfilled part thereof to be cancelled.

Buyer and seller agree that, for the purposes of proceedings either legal or by arbitration, this contract shall be deemed to have been made in England, to be performed there, any correspondence in reference to the offer, the acceptance, the place of payment or otherwise notwithstanding, and the Courts of England or arbitrators appointed in England, as the case may be, shall have exclusive jurisdiction over all disputes which may arise under this contract. Such disputes shall be settled according to the law of England whatsoever the domicile of the parties to this contract may be or become. Any party to this contract residing in a foreign country shall, for the purposes of proceedings, be considered as residing at the consulate in London of the country of his residence, and the service of proceedings at such consulate and the posting of a copy of such proceedings to the address abroad of the party in question shall be deemed good service, any rule of law notwithstanding This clause shall not be applicable to parties residing within the United Kingdom.

Difference in quality shall not entitle the buyer to reject, except under the award of arbitrators or the Committee of appeal, as the case may be. All disputes from time to time arising out of this contract shall be referred, according to the 15th printed rule endorsed on this contract, and this stipulation may be made a rule of any of the divisions of Her Majesty's High Court of Justice in England or in Ireland, or an order of the Court of Session in Scotland, on the application of either contracting party, and neither buyer nor seller shall bring any action against the other of them in respect of any such dispute except for an amount so settled by arbitration, or by the Committee of appeal, as the case may be, and it is expressly agreed that the obtaining an award from either tribunal, as the case may be, shall be a condition precedent to the right of either contracting party to sue the other in respect of any claim arising out of this contract.

Deposit clause.—Buyers have option of paying as within, or by a deposit of 5*s.* per quarter within seven days after receipt of invoice and notice that documents are ready, and balance on arrival of vessel or expiry of prompt, whichever happens first.

3.

London Corn Trade Associations Rules.

ules. 1. *Provisional Invoice,* with ship's name, marks, number of bags, and date of Bill of Lading, shall be handed by the seller to his buyer within 35 days for shipments by steamer, and 40 days for shipments by sailing vessel, from date of Bill of Lading, and by the subsequent sellers in due course, unless arrival of Mail Steamer be delayed by unforeseen circumstances. If documents are tendered within the time stipulated, but after arrival of the steamer to which the tender refers, landing charges incurred shall be borne by seller. No more than two appropriations shall be made on each 100 tons of wheat. A tender to the buying broker to be deemed a tender within the terms of this contract; all buyers not employing a London broker, to name in their contract a domicile in London where tenders may be made. The name of the original seller shall be inscribed on each invoice. In the event of a tender being of less quantity than 25 tons, the Dock Company's consolidated rate of charges shall be deducted from the invoice upon such quantity.

Bill of Lading. 2. *Bill of Lading* to be considered proof of date of shipment in the absence of evidence to the contrary Each shipment to be considered a separate contract. In the event of shipment by steamer in London, and the owner of the steamer refusing to contribute the 1*s.* per ton in accordance with the dock rates of 1877, the said 1*s.* per ton shall be paid by the seller.

3. *Notice to retire documents* shall be given by the last buyer to the original seller, and also to his seller, before 11-45 A.M., on the day of payment.

Differences in weights. 4. *Rejections and differences in weights* shall be settled at the cost, freight, and insurance market value, of the quality guaranteed, on the day on which delivery order for rejections and /or dock warrant is tendered, or, if not a market day, the previous market day. The claim for settlement to be made within 21 days of the receipt of the Dock Company's final return.

Marks. 5. *Marks.*—Any deviation of marks from B/L or invoice not to be objected to, so long as quality comes within terms of contract, and the bags bear the *bonâ fide* mark of the shippers. Any expenses incurred in landing and assorting deviating marks to be borne by original seller.

Sea damage. 6. *Sea damage.*—Receiver shall and first seller may give orders to the Dock Company in whose dock vessel discharges to sort by outward appearance. Water-stained bags not caked or crusted shall be stabbed, and if the wheat be uninjured by sea water the same shall be received by buyer.

Samples. 7. *Samples* to be drawn by the Dock Company in whose dock the ship discharges, from two or more sound bags in every hundred, as they rise from the ship. Should either seller or buyer require more than two bags sampled in every hundred, the extra expense to be borne by the party giving such orders The sealed dock sample to be taken as correct and final in the case of arbitration.

8. *Weights.*—Docks to weigh in all cases for average. If after 21 days of final discharge no other dock certificate be produced, the average weights shall be final. Weights.

9. *In default* of fulfilment of contract, either party, at his discretion, shall, after giving notice, have the right of re-sale or re-purchase, as the case may be, and the defaulter shall make good the loss, if any, by such re-purchase or re-sale, on demand. Default.

10. *Quality.*—Should it be decided by arbitration that the wheat shipped is of a distinctly different description to that guaranteed in this contract, seller shall, if required, receive the wheat back at the cost, freight, and insurance market value of the day on which the award is made, of the quality guaranteed, or should the buyer keep the wheat, the seller shall pay such an allowance for inferiority or difference in quality as may be awarded by arbitration in London, but it shall be in the discretion of the arbitrators to give in either case damages, if any, not exceeding 2*s* per quarter, over and above the difference in value, according to the special circumstances of the case. Quality.

11. *Notice of arbitration* to be given and arbitrator nominated by the last buyer to the last seller (and by other buyers in due course) not later than 14 days after the making up of the London Corn Trade Association standards for the month of shipment, and for sailing vessels (or, steamers not having arrived when the standard samples were made up) not later than 21 days after the dock sample is to hand, but if the sample is not forwarded to the offices of the London Corn Trade Association, and the buyer does not instruct his arbitrator to proceed with the arbitration within a further 14 days, the notice of arbitration to be void. Arbitration notice.

12. *Settlements.*—After the documents have passed, first seller and last buyer may settle all claims together, in which case the intermediate provisional invoices shall become final. Settlements.

13. *The Policies* are to be for the benefit of sellers, and are to be returned to them on final settlement, except in case of total loss. Should there be a general average, then after settlement of same. Policies.

14. *Any commission on freight* as per charter-party or return premium on policies of insurance to be for the benefit of sellers, but any discount for payment of freight in cash to be for benefit of buyers. Commission on freight.

Arbitration.—All disputes arising out of this contract shall be from time to time referred to two arbitrators, one to be chosen by each party in difference, the two arbitrators having power to call in a third in case they shall deem it necessary. In the event, however, of one of the parties appointing an arbitrator and the other refusing, or, for seven days after notice of the appointment neglecting to appoint, or in case of the death, refusal to act, or incapacity of any one or more of the arbitrators; and the party or parties with whom their or his appointment originally rested shall omit to appoint a substitute within three days after notice of such death, refusal, or incapacity, then upon application of either of the disputing parties, and provided the applicant pays to the Secretary of the Association the sum of 5*l.* 5*s.*, the questions in dispute shall stand referred to two arbitrators to be appointed by the Executive Committee of the London Corn Trade Association at a meeting convened by notice, and at which not less than three members shall be present. In case the two arbitrators appointed as aforesaid shall not Arbitrator's procedure.

within fourteen days after their appointment agree to an award or appoint a third arbitrator, then the said Executive Committee, at a meeting constituted as hereinbefore provided, shall appoint a third arbitrator, and, in case of the death, refusal to act, or incapacity of any such arbitrators, the said Executive Committee shall from time to time substitute a new arbitrator or arbitrators in the place of the arbitrator or arbitrators so dying, refusing, or incapacitated.

The arbitrators appointed shall be in all cases principals engaged in the corn trade as merchants, factors, or brokers, and members of the London Corn Exchange or Baltic. Any person having an interest in the matter in dispute shall be incompetent to act as arbitrator.

The award of any two arbitrators in writing (subject only to the right of appeal hereinafter mentioned) shall be conclusive and binding upon all disputing parties, both with respect to the matter in dispute and all expenses of and incidental to the reference and award.

Any member of the Committee, having an interest in the matter in dispute, shall not vote on the question of the appointment of arbitrators.

In case either party shall be dissatisfied with the award, a right of appeal shall lie to the Committee of Appeal elected for that purpose, and in accordance with the rules and regulations of the London Corn Trade Association in force at date of contract, provided notice be given to the Secretary of that Association before 4 o'clock P M. on the fourth business day after that on which the objecting party shall have notice of the award, and provided also the appellant (if a member of the Association) do pay to the Association, on giving notice of appeal as above, the sum of 15*l* 15*s*. as a fee for the investigation. Or provided also the appellant (if not a member of the Association) do pay in like manner and for the purpose to the Association the sum of 21*l*

The Committee of Appeal shall confirm the award appealed from, unless four of the members appointed to hear such appeal decide to vary such award.

The award of the Committee of Appeal, whether confirming the original award or varying such award, shall be signed by the Chairman of the Committee, whose signature as Chairman shall be conclusive, and when signed shall be deemed to be the award of the Committee, and shall in all cases be final.

No appeal will be allowed on awards for condition, where the grain is sold on terms known as Rye terms.

Notices under this Rule to be given in writing, and delivered personally, or left at the usual place of business of the person or firm to whom they are addressed.

4.

Memorandum by Sir Charles Bernard.

Memorandum by Sir Charles Bernard, in reply to the inquiry by the Right Honourable Viscount Cross regarding Impurities in Indian Wheat, dated 1st June 1888.

Indian wheat comes to Europe dirty—

partly by reason of admixture of gram or some other inferior grain;

partly by reason of admixture of earth or mud.

The first admixture is due to the custom which prevails in many parts of India of growing wheat together with gram or pulse, mixed or alternated, in the same field. They ripen about the same time, and tend to get mixed on the threshing floors. The probable reasons for this custom are that each product absorbs a different constituent of the soil and that each flourishes best with different varieties of season. The ryot hopes by having two crops in the ground together to win on one of them at any rate, whichever way the season goes. This practice of growing two crops together is less common where irrigation is much extended. It will decrease or disappear when the ryot finds it distinctly to his advantage to grow wheat alone, that is, when he gets, clearly and undoubtedly, a better price for wheat so grown. Causes of admixture of other grains.

The admixture of earth and mud with grain results from the Indian mode of threshing; every ryot, or sometimes every group of neighbouring ryots, has a threshing floor on which the sheaves are piled as they come from the fields. The threshing floor is always away from the village, so as to obviate fire risks. The floor is made of smoothed mud which hardens in the sun; the sheaves are trodden out by cattle, some of the mud of the floor gets trodden up by the cattle's feet, and is swept up with the grain. The grain, chaff, and dirt are winnowed by hand in the wind, but the winnowing does not separate or throw out the dirt. Thus some dirt is always left with the grain, except where winnowing and sifting is done by machinery. And it may be long before ryots can afford winnowing and sifting machines. Mud and dirt.

Knowing and finding that there is always *some* dirt in wheat, the great exporting houses in India (Bombay and Calcutta), and the importing firms in England have made up their minds to accept 5 per cent. of dirt with Indian wheat. Prices are quoted at the Indian ports, in London, and at the Railway marts in the interior of India, for wheat with 5 per cent. of dirt. Most of the exporting houses "sell forward," that is to say, they agree to deliver or ship wheat before they have bought it. They agree on a price, either in London or "free on board" at the Indian port, for wheat with the 5 per cent. of dirt, or as it is called "refraction." And they say that, until the general character of Indian wheat changes, they cannot pay a higher price for wheat with any less proportion of dirt. A report by Mr. Finucane, Director of Agriculture in Bengal, shows— Refraction. Results of action in Bengal.

(1) that export houses have distinctly declined to pay any better price for wheat with only one or two per cent. of dirt;

(2) that, therefore, it is directly to the disadvantage of the Indian ryot or middleman to deliver wheat with anything less than 5 per cent of dirt;

(3) that ryots and middlemen actually and systematically mix a certain proportion of dirt with their wheat before they deliver it to the export houses.

The correspondence with merchants appended to Mr. Finucane's letter, and a recent article in the *Indian Agriculturist*, show that all this is well known, and show also that Messrs. Ralli Brothers, the biggest export firm in Asia, made an effort to get a quotation for specially clean wheat. It is not clear how their attempt ended. But no

doubt it is difficult to change a custom like that of the 5 per cent. refraction, and to get the trade to sample specially, and to pay higher rates for small parcels of better cleaned wheat.

The Agricultural Department in India urge that improvement in the quality and purity of Indian wheat must be brought about by the big exporting firms showing that they want and will pay for better grain. The commercial authorities say that the Government can and should take steps to induce the ryots to send forward cleaner wheat; they add that, when cleaner wheat comes forward in quantity, they (the merchants) will be able to quote a better price for it. They cite the experience of the "Cotton Frauds" Department, which, by help of a special enactment, secured an immense improvement in the cleanness and purity of cotton sent from Bombay to England. No one, however, has ventured to propose a "Wheat Frauds" Department, supported by a small export due on wheat. In America the big export firms sift or separate the wheat, and guarantee (more or less) that any consignment which passes through their hands shall be according to sample.

Wheat Frauds Act.

I do not suppose any one would advocate a "Wheat Frauds" Act, and the circumstances above stated do not furnish ground for anything of the kind. Still it is obviously a distinct loss to all concerned that so much dirt should be, more or less intentionally, mixed with Indian wheat. The dirt adds an avoidable 3 or 3½ per cent. to the cost of carriage from the fields to the seaboard and across the sea, the dirt spoils or fouls the milling machinery in England, and it depreciates the value of Indian wheat. What, then, can be done to promote improvement?

I suggest that the state of the case, as now put, should be laid before representative people in the London Corn Trade, and they might be asked whether they could not devise some plan whereby Indian ryots and Indian export houses would be encouraged and induced to send home cleaner wheat. In the rice trade prices are quoted for clean grain (either cargo rice or white rice), and the London buyer is entitled to make a deduction on the price agreed upon, if the consignment falls in quality below the average of the year. For instance, a London miller agrees to buy a cargo of Arakan cargo rice of the average quality of the year at 7*s.* per cwt. If the rice, when delivered, is found to be injured by damp, or in any other way below the average of the year, the buyer makes a "cut" or (reduction) of so much per cent. on the price agreed. If buyer and seller cannot settle together the amount of the "cut" the rice goes before mercantile arbitrators, who decide upon the amount of "cut." The same process takes place in India, when a consignment of yarns and piece-goods is below sample, or damaged. It might be possible for wheat houses at the places of export, and in London, to quote and agree upon prices for wheat, with (say) only 2 per cent. of "refraction," and it might be agreed or understood that a "cut" would be enforced on consignments below that average. The "cut" would have to be made at the port of despatch in India, so Indian traders would have to accept the arrangement. It would seem, however, from the passage italicised on the first page of Mr. Finucane's letter that Ralli Brothers, the biggest of Indian export firms, would gladly accept any practicable arrangement for bettering the average of Indian wheat exports.

'Cut" system in rice.

If the Right Honourable the Secretary of State were disposed to make any suggestion of this kind to the representatives of the wheat trade, I would propose that this note, with copies of the papers quoted, be handed to Mr. Finucane (who is now in England on short leave), in order that he might call on Messrs. M'Dougall and others, to ascertain their view upon such a suggestion.

Appendix I.

1.

Report (No. 2) by McDougall Brothers *to the Under-Secretary of State for India on Indian Wheat Impurities, dated 13th November 1888.*

Analysis of admixtures.

In continuation of my letter of the 22nd August last, and with reference to your letter of the 22nd September following, I have now the honour to submit the accompanying tabular statements, showing the percentage of admixture of white and red grains, and of dust, dirt, and seeds, and also the amount of weevilled and otherwise damaged grain in the monthly average samples of the various denominations of Indian wheats imported into England last year. Similar analyses of other wheats are also added for the purpose of comparison. (See Appendix A.)

I was most kindly supplied by the London Corn Trade Association with their monthly standard samples, which are drawn from the Indian wheats arriving in Great Britain, and forwarded to London for this purpose; and I was also kindly supplied by the Liverpool Corn Trade Association with their sample of choice white Bombay wheat.

I have carefully retained all the samples and the separated portions, and shall be prepared to submit them for your inspection.

The white wheats, when separated from all admixture, are of a very fine quality, equal to the finest in the world, and if they could be so shipped, would command the highest price.

The importance of shipping wheats free from adulteration cannot be expressed in better terms than in the letter of the Honourable F. Forbes Adam to Lord Reay, and I would suggest that it should be published with this Report. (See Appendix B.)

Buyers of Indian wheats are under the impression that they cannot obtain them otherwise than in their present foul condition, and many supply themselves with early shipments only, by steamer, for their immediate requirements, and *viâ* the Cape to arrive later. The analysis points to the intentional admixture of impurities in the later months of the year.

I have heard it stated that French buyers obtain Indian wheats in a superior condition and at a higher price than we do. I would suggest that inquiries be made and samples obtained from Marseilles to ascertain if this is so.

APPENDICES.

Table No. 1.

Indian Wheats imported from Calcutta.

Description of Wheat.	Date.	Red.	White.	Admixture.					Weevilled.	Damaged.	Total Loss.
				Dust.	Dirt.	Seeds.	Barley, Oats, or Rye.	Total.			
	1887.										
No. 1 Club Calcutta (White)	May	16·4	80·4	·9	·7	1·4	·2	3·2	·1	·2	3·5
,, ,, ,,	June	19·1	77·1	·1	1·4	1·8	·5	3·8	·8	·3	4·9
No. 2 Club Calcutta (White)	March	21·3	77·1	·5	—	·6	·5	1·6	—	2·3	3·9
,, ,, ,,	April	31·1	66·2	1·1	—	·6	1·0	2·7		4·1	6·8
,, ,, ,,	May	25·8	71·0	·4	·4	·9	1·5	3·2	·3	1·2	4·7
,, ,, ,,	June	35·1	62·0	·8	—	·9	1·2	2·9		·9	3·8
,, ,, ,,	July	44·8	50·0	1·6	·5	1·9	1·2	5·2	·7	—	5·9
,, ,, ,,	August	42·8	50·2	3·0	·2	2·2	1·6	7·0	2·0	1·3	10·3
,, ,, ,,	September	39·1	56·2	·9	·5	1·7	1·6	4·7	3·5	·6	8·8
,, ,, ,,	October	37·5	58·0	1·5	·4	2·0	·6	4·5	2·2	·8	7·5
,, ,, ,,	November	35·0	59·1	1·7	·8	2·2	1.2	5·9	5·1	1·4	12·4
Hard Calcutta	April	37·8	58·8	·7	1·2	·6	·9	3·4	—	·4	3 8
,, ,,	May	41·5	55·0	·8	1·1	·8	·8	3·5	·1	·2	3·8
,, ,,	June	39·4	58·4	·3	·4	·8	·7	2·2	·7	·8	3·7
,, ,,	October	31·2	63·2	3·9	·4	·9	·4	5·6	2·2	·3	8·1
,, ,,	November	38·2	53·3	6·6	·6	·9	·4	8·5	4·2	1·4	14·1
,, ,,	December	31·1	66·0	·5	·4	·9	1·1	2·9	5·7	1·0	9·6
Soft Red Calcutta	April	93·8	1·8	1·3	1·2	1·1	·8	4·4	—	·4	4·8
,, ,,	May	90·5	5.6	·9	·8	1·3	·9	3·9	·2	·6	4·7
,, ,,	June	87·7	7·4	1·7	·6	1·1	1·5	4·9	1·3	·8	7·0
,, ,,	July	89·9	2·7	4·8	·5	·7	1·4	7·4	·8	—	8·2
,, ,,	August	90·5	3·8	1·6	·5	1·2	2·4	5·7	3·2	·2	9·1
,, ,,	September	91·3	4·2	1·3	·6	1·0	1·6	4·5	3·7	·7	8·9
,, ,,	November	88·8	5·1	1·5	·7	1·8	2·1	6·1	6·1	·5	12·7
,, ,,	December	91·3	4·8	·8	·8	1·3	1·0	3·9	5·3	·4	9·6

TABLE No. 2.

Indian Wheats imported from Bombay and Karachi.

DESCRIPTION OF WHEAT.	Date.	Red.	White.	ADMIXTURE.					Weevilled.	Damaged.	Total Loss.
				Dust.	Dirt.	Seeds.	Barley, Oats, or Rye.	Total.			
	1887.										
Choice White Bombay . . .	February . . .	4·5	94·1	·1	1·1	·2	—	1·4	—	·5	1·9
No. 1 Club Bombay (White) . .	April	10·1	87·2	·7	1·3	·7	—	2·7	·1	·4	3·2
,, ,, ,, . .	May	11·5	86·4	·4	1·4	·3	—	2·1	—	·2	2·3
,, ,, ,, . .	June	10·6	86·8	·4	1·8	·4	—	2·6	—	·6	3·2
,, ,, ,, . .	July	11·6	84·8	1·3	1·4	·9	—	3·6	·5	·7	4·8
,, ,, ,, . .	August	11·1	86·5	·9	·5	1·0	—	2·4	·5	·4	3·3
,, ,, ,, . .	September . . .	10·5	87·7	·7	·6	·5	—	1·8	2·4	·8	5·0
,, ,, ,, . .	October	12·0	85·4	·6	·9	1·1	—	2·6	4·2	·9	7·7
,, ,, ,, . .	November . . .	12·6	82·9	2·1	1·5	·9	—	4·5	1·4	·4	6·3
,, ,, ,, . .	December . . .	10·9	86·8	·4	1·1	·8	—	2·3	·7	·6	3·6
Soft Red Bombay	April	97·8	·4	·4	1·4	—	—	1·8	—	—	1·8
,, ,, ...	May	97·5	·9	·9	·7	—	—	1·6	—	—	1·6
,, ,, ...	June	96·2	1·5	1·1	1·2	—	—	2·3	—	—	2·3
Hard White Bombay . . .	April	21·1	77·8	·2	·8	·1	—	1·1	—	—	1·1
,, ,, . . .	August	16·8	81·7	·4	1·1	—	—	1·5	·6	—	2·1
Hard Red Bombay	March	97·4	·8	·8	1·0	—	—	1·8	—	·3	2·1
,, ,, ...	April	96·7	1·7	·4	1·1	·1	—	1·6	—	·6	2·2
,, ,, ...	July	95·7	1·6	·3	1·9	·5	—	2·7	—	·5	3·2
Red Club Bombay	June	73·2	24·0	·4	1·8	·6	—	2·8	·2	·6	3·6

Table No. 2—continued.

Description of Wheat.	Date.	Red.	White.	Admixture.					Weevilled.	Damaged.	Total Loss.
				Dust.	Dirt.	Seeds.	Barley, Oats, or Rye.	Total.			
	1887.										
White Jubbulpur . .	July	15·0	81·8	6	1·0	1·6	—	3·2	—	·4	3·6
White Delhi	May	23·2	73·7	·9	·2	·8	1·2	3·1	—	·4	3·5
" "	June	19·0	77·1	1·0	.3	1·1	1·5	3·9	·2	·5	4·6
" "	July	15·9	78·6	·5	1·1	·7	3·2	5·5	·5	·6	6·6
Red Delhi	July	93·4	·9	·9	·7	·6	3·5	5·7	·5	·7	6·9
Atbara (Red)	February . . .	96·8	·6	·6	1·4	·6	—	2·6	3·4	1·9	7·9
" "	March	95·4	1·0	1·5	1·6	·	—	3·6	—	—	3·6
" "	April	94·8	1·1	2·1	1·5	·5	—	4·1	—	·4	4·5
" "	May	97·0	·3	·5	1·7	·5	—	2·7	—	—	2·7
White Karachi	July	17·1	78·3	·8	·7	·8	2·3	4·6	·3	·7	5·6
"	October . . .	34·3	58·2	1·2	·4	·8	5·1	7·5	1·7	·6	9·8
"	December . . .	19·2	70·5	·8	·5	·4	8·6	10·3	1·3	·6	12·2
Red Karachi	July	86·0	6·6	·6	·6	1·0	5·2	7·4	·2	·3	7·9
" "	December . . .	79·4	12·1	·2	·6	—	7·7	8·5	·8	...	9·3

TABLE No. 3.

European Wheats.

DESCRIPTION OF WHEAT.	Date.	Red.	White.	ADMIXTURE.					Weevilled.	Damaged.	Total Loss.
				Dust.	Dirt.	Seeds.	Barley, Oats, or Rye.	Total.			
English White	1888	2·4	97·5	—	—	·1	—	·1	—	·3	·4
„ Red	„	97·0	2·7	—	—	·3	—	·3	—	·2	·5
Koningsburg (Red)	„	98·5	·2	—	—	·4	·9	1·3	—	1·5	2·8
Dantzig (White)	„	27·4	71·3	·1	·1	·5	·6	1·3	—	·8	2·1
Russian:—											
St. Petersburg (Red)	„	98·2	—	·1	—	1·0	·7	1·8	—	2·8	4·
Taganrog Azima „	1887	95·8	·3	—	·2	·1	3·6	3·9	—	·3	4·2
„ „ „	„	89·8	—	—	·1	·5	9·6	10·2	—	·5	10·7
„ Hard „	„	52·8	44·1	·1	·4	·2	2·4	3·1	—	·6	3·7
Ghirka „	„	98·1	—	·2	·2	·9	·6	1·9	—	1·3	3·2
Common Odessa „	„	91·2	—	·5	—	1·6	6·7	8·8	—	3·8	12·6
Egyptian Saida (White)	„	46·0	42·2	·3	6·4	·6	4·5	11·8	·5	·1	12·4

Table No. 4.

American and Australian Wheats.

Description of Wheat.	Date.	Red.	White.	Admixture.					Weevilled.	Damaged.	Total Loss.
				Dust.	Dirt.	Seeds.	Barley, Oats, or Rye.	Total.			
American:—											
No. 1 Hard Duluth (Red)	1887	98·5	·2	·3	—	·8	·2	1·3	—	·9	2·2
Duluth	,,	98·1	·4	·6	—	·9	—	1·5	—	·2	1·7
Red Winter	,,	98·7	·2	·3	—	·8	—	1·1	—	1·0	2·1
,, ,, No. 2	,,	98·7	·2	·2	—	·6	·3	1·1	—	1·8	2·9
,, Chicago No. 2	,,	96·7	2·0	·6	—	·5	·2	1·3	—	·4	1·7
,, Hard Spring No. 1	,,	98·8	·3	·2	—	·6	·1	·9	—	·2	1·1
,, Springs No. 2	,,	97·8	1·0	·3	—	·6	·3	1·2	—	1·1	2·3
Red North-West Spring No. 2.	,,	98·6	·1	·3	—	·5	·5	1·3	—	·8	2·1
,, Milwaukie Springs No. 2.	,,	97·0	·8	·8	—	1·0	·4	2·2	—	2·1	4·3
Oregon (White)	,,	·2·3	97·0	—	—	·2	·5	·7	—	—	·7
Californian No. 1 ,,	,,	5·3	93·3	—	—	·7	·7	1·4	—	·1	1·5
,, No. 2 ,,	,,	6·5	87·8	—	—	2·8	2·9	5·7	·1	·5	6·3
,, Amber No. 1 ,,	,,	3·0	92·9	—	—	·8	3·3	4·1	—	·2	4·3
,, ,, No. 2 ,,	,,	9·2	81·7	—	·1	2·5	6·5	9·1	—	4	9·5
Chilian ,,	,,	15·5	82·5	·2	·1	1·7	—	2·0	—	1·1	3·1
Australian Melbourne ,,	1888	1·4	97·8	·1	—	·7	—	·8	—	·3	1·1
,, South Australian ,,	,,	1·2	97·9	—	·1	·8	—	·9	—	·2	1·1
New Zealand:—											
Round ,,	,,	27·7	72·1	—	—	—	·2	·2	—	·1	·3
Long ,,	,,	2·4	96·8	—	—	·8	—	·8	—	—	·8

Letter from the HONOURABLE F. FORBES ADAM *to His Excellency the Governor of Bombay, dated 25th August 1888.*

Bombay Chamber's action to improve standards.

As regards wheat adulteration, about which you write, I regret to say that little progress has been made in the right direction since I first pressed the matter on the attention of the Chamber of Commerce some years ago. We have within the last few months moved forward, but the position is not yet satisfactory. The fault lies not at the door of the Bombay exporters, but with millers, buyers, and corn trade associations in England. The truth is, people in England do not and cannot be expected fully to realize the drawbacks caused to the India wheat trade by having to ship dirty wheat, nor can they understand the importance to India, in her competition with other exporting countries (America and Russia chiefly), of getting rid of what is actually a tax, and which operates in the same way as an export duty, or nearly so,—I mean the railway carriage from the interior to the sea coast, and the sea freight from the port of shipment to the consuming country, of 4 per cent. of purely useless dirt. I showed by figures that in 1885 the tax was equal to about 1¼ per cent. on the value of the wheat shipped.

But the importance is brought home to us here, and I am satisfied that all leading export houses would heartily welcome a change to a healthier basis of operations. Practically Indian wheat, under present circumstances, cannot be shipped quite free from dirt and impurities, but it would be quite possible to conduct the business on a 2 per cent. basis, and this I have been endeavouring to bring about.

At a meeting of the Chamber of Commerce on 9th April last, the subject was very fully discussed, and it was resolved again to address the London and Liverpool Corn Trade Associations, begging them to fix the refractions on all sale contracts of wheat if "not over 2 per cent.," as Bombay shippers were anxious to improve the name of India wheat, and also remove the disadvantages that accrued from shipping large admixtures of dirt, &c. The Associations were urged to assist us in the matter. The reply from the London Association reached us in May last. It was to the effect that members having fully considered the representations of the Bombay Chamber were not able to adopt the proposals made, as buyers in England had made no objection to the existing form of contract, and sellers were divided in opinion.

The response of the Liverpool Association was, I am happy to say, more satisfactory. It arrived only a few weeks ago, and is dated 12th July. It said that members were desirous of meeting the views of the Bombay Chamber, and had decided to alter the standards of wheat on which sales were made, and that these standards would in future contain only "2 *per cent. of dirt, seeds, and grain other than wheat.*"

This is how the trade stands to-day, so far as Bombay is concerned, and I am not without hopes that before long the London Association will re-consider their decision and follow the commendable example of the Liverpool body.

As you know, exporters have to ship quality equal to what is sold. If the English Association decided to buy only pure wheat, the Bombay merchants would have to ship it. But as, unfortunately, the associations seem to prefer to buy wheat with 4 per cent. of dirt in it, the Bombay merchant has no say in the matter, but must supply what is wanted or stop his business.

Appendix J.

I.

Report (No. 3) by McDougall Brothers *to the Under-Secretary of State for India on Indian Wheat Impurities, dated 25th March 1889.*

Summary of replies from millers.

I have to acknowledge the receipt of your letter of the 25th February, stating that you have received replies from the millers and Chambers of Commerce to the questions issued with my last report on the impurities of Indian wheats. Appendix A.

Sir George Birdwood has forwarded these replies to me, together with an analysis of them.

The Circular letter of Mr. J. A. Godley, C.B., of the 31st December 1888, enclosing a copy of a form of six questions (Appendix B), was addressed to 732 of the principal millers in the United Kingdom; up to the date of this report 510 millers (Appendix C) have returned the forms duly filled up, and Mr. B. J. Rose's very carefully prepared analysis of their replies is given below.

"*Question* 1. Do you use Indian wheat in quantity?

249 millers state that they use Indian wheat in quantity.

259 millers only use Indian wheat in limited quantity.

2 do not reply to this question."

"*Question* 2. If not, are you prevented from so doing by its impurities?

348 millers state that they are partly prevented from using Indian wheats in consequence of its impurities.

41 millers having the necessary machinery to deal with the dirt, &c., are not prevented from using Indian wheat.

121 do not reply to this question."

"*Question* 3. Would you use larger quantities if free from admixture and impurity?

461 millers state that they would use a much larger quantity of Indian wheat if they could obtain it in a clean state.

27 millers state that even if clean they could not use a larger quantity of Indian wheat.

22 do not reply to this question."

"*Question* 4. Is the admixture of red wheat with white wheat of serious consideration to you?

229 millers state that the admixture of red (or hard) with white (or soft) wheat is of serious importance to them, as the red hard wheat can only be reduced by 'roller mills.'

256 millers, most of whom have 'roller mills,' are indifferent as to the admixture.

25 do not reply to this question."

Question 5. The shipments in the later months of the year show considerable increase of impurities. Do you in preference secure the earlier shipments ; and, if so, do you pay a higher price for the same ?

322 millers state that they prefer the early shipments and pay higher prices for them.

16 state that they are indifferent, it being merely a question of relative values.

172 do not reply ; most of these millers dealing indirect with merchants are unable to give an opinion."

" *Question* 6. Would you approve of a form of contract limiting the admixture of dirt, seeds, and grain other than wheat to 2 per cent. in preference to the present 'f. a. q.' form ?

429 millers express their warm approval of a form of contract limiting the admixture to 2 per cent.

4 millers are against any alteration.

77 who do not reply are mostly millers unacquainted with the form of purchase ; they buy locally from merchants."

A number of interesting extracts from the more important general remarks made by the millers after the answers to the questions are given in Appendix D.

It can now no longer be stated that buyers in England have made no objection to the existing form of contract.

I have made diligent inquiries on the market, and have to report a very general desire for a change of form of contract, to secure a supply of clean wheat. Great pleasure is expressed that Viscount Cross and the Indian Council have taken up the matter, and the opinion is largely held that it should now be pressed to a satisfactory conclusion, even to the extent, if necessary, of an Act being passed to make it a fraud to deal in wheats containing an excessive amount of seeds and dirt, as was the case in cotton.

Clean Indian wheats are particularly useful to English millers. Damp English wheats can readily be put into condition by mixing with the dry Indian wheats which absorb the excessive moisture and so benefit both.

There is an important national reason why wheats from India should be shipped in a clean condition, *viz.*, that in case of war, all sources of European wheats might be stopped, and it would be desirable that wheats should be shipped from our colonies in a condition fitfor immediate use. It would be quite impossible to grind for human food the dirty wheat now shipped from India by itself uncleaned.

It has been stated that those millers who have already provided themselves with extensive machinery for cleaning wheats would object to the change, but on looking through the replies I find, with hardly an exception, that they express a strong wish to have clean wheat.

Most other products from India are shipped in a better condition than wheat.

Rice is perfectly free from all admixture, except its own husk.

Linseed, some years ago, arrived mixed with a large percentage of dirt, but a new contract form, limiting all admixture to 4 per cent., was adopted, and now linseed arrives in a clean condition.

Cotton was shipped in a very dirty condition until the authorities interfered to prevent the admixture of impurities, and passed the Bombay Cotton Frauds Act of 1863 and 1878; this Act has since been repealed, and I have been informed by a cotton broker that he could tell by the altered condition of shipment the month that the Act was withdrawn.

The replies from the Chambers of Commerce show that they do not take a very direct interest in grain. Those who do reply approve of the effort now being made to import clean wheat. The reply from the Cardiff Chamber expresses the conviction that "the present fair average quality form is a direct incentive to ship impurities, and that the only solution of the difficulty is a permanent percentage standard, which the quantities of extraneous matter must not exceed."

This view is undoubtedly the correct one, and is the cause of all the admixture being made.

In looking through the grain contract forms from other countries I find that *Australia* and *New Zealand* are the only countries which ship entirely upon the fair average quality system, but there has never been any admixture of dirt.

California ships equal to official sample, in good condition.

Chili ships equal to official sample, in good condition.

America (Atlantic States) ships on graded sample, in good condition.

La Plata ships upon marked sample, in good condition.

The *Black Sea* is nearly all upon sample.

The *Baltic* is all upon sample.

Russian barley is now sold upon what is known as the Bristol clause, which limits the amount of admixture to 3 per cent.

The very interesting letter addressed to Viscount Cross by Messrs. Marshall, Sons & Co. (see Appendix E) very fully confirms the information we have as to the actual mixing of dirt with wheat, and it was admitted to me a few days ago by a shipper of wheat from India, that they bought wheat in the latter months of the season with 6 per cent. of dirt, and relied for their profit upon this percentage of dirt.

The replies now received conclusively prove—

(1) that the impurities in Indian wheats greatly restrict their use;

(2) that clean Indian wheats are much desired, and would cause a largely increased demand and a higher price;

(3) that millers earnestly desire a new contract form limiting admixture to under 2 per cent.

And I have now to suggest several means which would ensure the object aimed at:—

(1) by the mutual consideration of the subject by the Indian Council and by representatives from the various corn trade associations;

(2) by the formation of a syndicate to purchase and export clean Indian wheats;

(3) by the intervention, should it be found necessary, of the Government of India, to make it fraudulent to deal in or export grain to be used for human food in any way adulterated.

I am sanguine that the first of these suggestions may of itself prove successful in bringing about the desired reform, as I cannot but think that the selfish interest of a few large firms must give way to the unanimous desire of the millers of this country, and to the great ultimate benefit of all concerned.

But, if not, I do not hesitate to strongly advise that the third of these suggestions should be promptly adopted.

In connection with this inquiry, I think the fact should not be overlooked that Italy, France, and Belgium are buyers of the better class Indian wheats, and if these wheats were clean there is no doubt this portion of the trade would receive a great impulse, as on the Continent they are less able to deal with the impurities than we are here, and consequently only the high class wheats are in demand.

2.

Letter from the Under-Secretary of State for India to JOHN MCDOUGALL, *Esq., C.C., dated 25th February 1889.*

In continuation of my letter of the 15th December last, I am directed by the Secretary of State for India in Council to inform you that the replies of the millers and Chambers of Commerce of the United Kingdom to the questions prepared by you on impurities in Indian wheats have now been received; and Sir George Birdwood has been directed to submit them to you for report before they are forwarded to the Government of India.

3.

Copy of Circular letter of the Under-Secretary of State for India addressed to 732 Millers,—No. R. S. and C. 1602, dated 31st December 1888.

I am directed by the Secretary of State for India in Council to forward to you the enclosed copy of a Report by Mr. John McDougall, late of Messrs. McDougall Brothers, 10, Mark Lane, on Impurities in Indian Wheats; and to say that Viscount Cross will be greatly obliged by your replying to the accompanying questions relating to the same, and for any further remarks on the subject with which you may be pleased to favour His Lordship.

ENCLOSURE TO MR. GODLEY'S LETTER OF THE 31ST DECEMBER 1888.

Impurities in Indian Wheats.

Question 1.—Do you use Indian wheat in quantity?

Answer.

Question 2.—If not, are you prevented from so doing by its impurities?

Answer.

Question 3.—Would you use larger quantities if free from admixture and impurity?

Answer.

Question 4.—Is the admixture of red wheat with white wheat of serious consideration to you?

Answer.

Question 5.—The shipments in the later months of the year show considerable increase of impurities. Do you in preference secure the earlier shipments; and, if so, do you pay a higher price for the same?

Answer.

Question 6.—Would you approve of a form of contract limiting the admixture of dirt, seed, and grain other than wheat to 2 per cent., in preference to the present f. a. q. form?

Answer.

Remarks.

Address _____

_____

(Signature) _____

Date _____

4.

Number and Distribution of the Millers to whom MR. MCDOUGALL'S *Report No. 2 was submitted.*

ENGLAND AND WALES.

County.	Number of Forms sent.	Number of Forms returned.	County.	Number of Forms sent.	Number of Forms returned.
Bedford	5	5	Leicester	6	4
Berkshire	11	7	Lincoln	22	18
Bucks	3	2	Merioneth	1	1
Cambridge	5	4	Middlesex	10	6
Carnarvon	6	3	Monmouth	7	3
Cheshire	17	13	Montgomery	1	1
Cornwall	9	8	Norfolk	10	8
Cumberland	9	7	Northampton	10	6
Denbigh	3	2	Northumberland	7	6
Derby	16	7	Nottingham	15	11
Devon	15	7	Oxford	7	7
Dorset	5	3	Ruthland	1	1
Durham	25	16	Shropshire	8	5
Essex	15	9	Somerset	10	6
Flint	3	2	Stafford	19	12
Glammorgan	3	1	Suffolk	8	5
Gloucester	24	21	Surrey	14	10
Guernsey	1	1	Sussex	7	6
Hampshire	12	9	Warwick	16	11
Herefordshire	8	8	Wiltshire	15	12
Hertfordshire	6	2	Worcester	13	7
Huntingdon	4	4	Yorkshire	103	77
Isle of Man	1	1			
Kent	18	14			
Lancashire	63	50	TOTAL	597	428

SCOTLAND.

County.	Number of Forms sent.	Number of Forms returned.	County.	Number of Forms sent.	Number of Forms returned.
Aberdeen	1	1	Lanark	11	10
Ayr	4	2	Renfrew	3	1
Banff	1	1	Roxburgh	1	1
Edinburgh	6	5	Stirling	2	0
Fife	3	3			
Forfar	2	1			
Haddington	1	1	TOTAL	35	26

IRELAND.

County.	Number of Forms sent.	Number of Forms returned.	County.	Number of Forms sent.	Number of Forms returned.
Antrim	10	8	Louth	3	1
Armagh	2	2	Mayo	1	0
Carlow	1	1	Meath	6	2
Clare	1	0	Queen's County	3	1
Cork	17	7	Sligo	1	0
Down	3	3	Tipperary	5	1
Dublin	12	10	Tyrone	2	2
Galway	1	0	Waterford	3	1
Kerry	1	0	West Meath	2	0
Kildare	5	4	Wexford	3	2
Kilkenny	4	2	Wicklow	5	4
King's County	2	2			
Limerick	3	1			
Londonderry	2	2	TOTAL	100	56

5.

A Selection of Extracts from the more important General Remarks made by Millers.

No. 10. *Belfast.*—Using 9,000 tons a year of Indian wheat. States stones are the worst and most troublesome impurity. Red and white wheats would fetch more if separate. Belfast is one of the largest importers of Indian wheat, its flour being liked in the north of Ireland for making bread with soda and buttermilk, instead of yeast.

No. 20. *Bedford.*—Suggests that all corn having over 2 per cent. admixture should be compulsorily cleaned at port of entry before being offered for sale.

No. 34. *Berwick-on-Tweed.*—Indian wheat having to be washed before use renders it useless for mixing with damp wheats.

No. 43. *County Carlow.*—"When we can get Indian wheats free from impurities, they will rise in value in our markets and will be worked in much larger quantities by most millers."

No 46. *Bangor.*—Indian wheats are principally used by the larger mills, but it must not be forgotten that in the aggregate the smaller mills, spread over the country, form a considerable portion of the grinding power of the country.

No. 58. *Chester.*—Used 5,500 tons Indian wheat 1888. Would use much larger quantities if clean.

No. 65. *Stockport.*—A large user of Indian wheat. Considers any arrangement of form of contract which would improve matters is very desirable, and would materially assist development of the trade.

No. 88. *Penzance.*—Considers the present f. a. q. form an instrument to legalize fraud on millers.

No. 121. *Derby.*—"The millers can take care of themselves, please let them alone. I buy wheat for what I think it is worth, dirt and all."

No. 131. *Tiverton.*—Prefers the flour from clean Indian wheat to that of any other foreign white wheat.

No. 138. *Devon.*—Has not used Indian wheat for past three years in consequence of the dirt, &c. The quality varied as much as 4*s.* per quarter between one bag and another.

No. 149. *Dublin.*—Is of opinion that a competitive trial of wheat cleaning machinery would be of great advantage.

No. 151. *Dublin.*—States that stones and clay are the worst impurities in Indian wheats. Also states that they are greatly pleased to see that the Government are interested in this very important matter.

No. 153. *Dublin.*—"I am most anxious to support any colony of the British Empire in preference to America, and am convinced if the India wheat was as pure and free from dirt it would get a great sale in Ireland."

No. 154. *Dublin.*—No direct imports into Dublin port. Freight from Liverpool brings price of Indian wheat high, and its use has always been obstructed by the necessity of washing before use.

No. 161. *Darlington.*—Dirt and dust gets into the weevil holes and it cannot be removed. This injures quality of the flour.

No. 167. *Darlington.*—Thinks that Indian wheats if sent clean would show a clear saving to the sender of fully 2*s.* per quarter.

No. 174. *Durham.*—Would approve of any measures tending to bring wheat in a cleaner condition.

No. 180. *Stockton.*—Indian wheats would have been of great service last year, on account of the excessive moisture in our English wheats, had they been clean.

No. 186. *Edinburgh.*—If the Indian wheats are shipped clean they would be largely used. Washing affects their baking qualities, and prevents their use.

No. 207. *Kirkcaldy.*—If we could get the fine white wheats clean we could use a considerable quantity.

No. 217. *Cardiff.*—"In order to place the trade on a really satisfactory basis, we hold that the Corn Trade Associations in London and

Liverpool should make up *standards of all the different grades of wheat at the beginning of the season, and that all contracts should be made for equality equal thereto, instead of as at present for fair average quality.* The Californian trade is conducted on such a contract, which gives satisfaction to both buyer and seller, and it is well known to what vast proportions this trade has grown. We have for some time past urged the Corn Trade Associations in London and Liverpool to take action in this sense, and with such a contract and guarantee of not more than 2 per cent. admixture of foreign matter we should predict a vast increase in the general demand for East Indian wheats."

No. 235. *Gloucester.*—Many country millers are prevented from using Indian wheats, not having the necessary machinery to remove the dirt, and other impurities.

No. 241. *Gloucester.*—"If Indian wheat was free from stones and dirt, I should use 5,000 quarters a year."

No. 248. *Basingstoke.*—Millstone millers are almost prevented from using Indian wheats, on account of the impurities.

No. 270. *Huntingdon.*—Have used from 4,000 to 5,000 tons a year of Indian wheat; would use much more if clean.

No. 271. *Huntingdon.*—The early shipments of Indian wheat are always worth more than the late, they are used as baits, the shippers knowing that the average of the earlier months will not affect the quality they are bound to deliver. Large shippers are able to ship so much *bad* wheat that they can affect the standard by which the contract is fixed, and so cheat their customers. If A can manage to ship half the wheat of one month of a quality 2*s.* per quarter below other shippers, the standard of the month will be lowered 1*s.* per quarter, and he will only have 1*s.* per quarter deducted from him for bad delivery, whereas he has saved 2*s.* per quarter in the cost of the wheat shipped. Of course this is an exaggerated case, but it is always in a degree true.

No. 274. *Isle of Man.*—Would use Indian wheat extensively if properly cleaned.

No. 286. *Gravesend.*—Indian wheat is of excellent quality, and if clean it would compete successfully with American and Russian, which millers cannot at present dispense with.

No. 296. *Kildare.*—Indian wheat would be more largely used in this district if it was free from clay, &c. "Having at one time used a large proportion of Indian wheat for flour for the Government bakery, Curragh Camp, it was objected to by the supply officer, on the ground that the loaf was too small."

No. 301. *Kilkenny.*—States that it would be of immense advantage to English and Irish millers to be able to procure Indian wheat in such a condition that ordinary cleansing machinery would be sufficient to render it fit to manufacture.

No. 304. *King's County.*—"We have used so very little Indian wheat, owing to its impurity, that we cannot give as full an opinion as we should wish."

No. 307. *Glasgow.*—Indian wheats, if freed from impurities, would be invaluable for admixture with native Scotch wheats, and would soon be appreciated here.

No. 309. *Glasgow*—If we had a regular supply of clean, fine Indian

wheats, we are convinced that they would largely take the place of both Russian and American wheats.

No. 319. *Blackburn.*—The admixture of dirt, &c., in Indian wheats causes nothing but loss to all concerned, and discomfort to all who work in or about it, and in many places the miller dare not use Indian wheat, for fear of creating a nuisance to his neighbours when cleaning it.

No. 321. *Liverpool.*—States that the mixture of heated and damaged grain with wheat is the most serious difficulty which the miller has to contend with. Modern wheat cleaning machinery will eliminate the dirt and most of the foreign seeds, but it is impossible by any process to separate damaged wheat from sound.

No. 334. *Accrington.*—If Indian wheats could be delivered in the same clean condition as those from America and all our colonies, there would be an immense impetus given to its use.

No. 335. *Liverpool.*—Uses an average of 26,000 tons a year of Indian wheat. Considers the present f. a. q. form a moveable standard of quality, and therefore unsatisfactory to the consumer.

No. 336. *Manchester.*—Uses Indian wheat almost exclusively. Are not bread flour millers, but size flour makers, and often buy wheats that cannot be used for food on account of the impurities. Only on this account are the impurities an advantage to us.

No. 339. *Bolton.*—If Indian wheats could be supplied as free from impurities as grain from other countries, we should use a much larger quantity, probably 10 to 20 per cent. more.

No. 348. *Manchester.*—"I think I am one of the largest consumers of Indian wheat, say about 50,000 to 70,000 qrs. per year. I would suggest that all wheat for shipment *viâ* the Cape after June should be placed in bins before shipment, and subjected for a few hours to the vapour of burning sulphur, to destroy the weevils, which are very destructive in Cape cargoes."

No. 357. *Liverpool.*—"There is one point nowhere named in Mr. McDougall's report, nor have I seen it elsewhere, but which has struck me very forcibly. It is that the use of Indian wheats by English millers has caused a sensible increase in the demand for English farmers' wheat for the sake of the mellowness and flavour needed to counteract the ricey tendency of even the best Indian wheats."

No. 373. *Cheshire.*—Would use 20 per cent. more Indian wheat if it was clean.

No. 376. *Barrow-in-Furness.*—Uses from 8,000 to 10,000 tons of Indian wheat a year. A great number of small mills are prevented from using Indian wheats on account of the costly machinery needed to clean them.

No. 388. *Doncaster.*—If anything can be done in favour of importing Indian wheat in purer state, it would receive support.

389. *Boston.*—If Indian wheats could be imported as clean as the Californian or American red wheat, would hardly ever buy any other kind of foreign wheat.

No. 393. *Carlow.*—Tried Indian wheat, but found it would not work satisfactorily after receiving similar cleaning to that given to Russian and American wheats.

No. 398. *Lincoln.*—Found the dirt in form of dust very injurious to

the health of wheat porters and millers. There is great need of improvement.

No. 400. *Lincoln.*—Would use our own colonial wheats in preference to others, if they could be obtained clean, but at present the waste is too great.

No. 403. *Lincoln.*—"We prefer Indian to Russian wheat, but we want less dirt."

No. 405. *Lincoln.*—"We are exceedingly pleased to see that this matter is receiving attention, and we trust results will be beneficial. We think the Indian wheats are worse this year than last."

No. 411. *Londonderry.*—Indian wheat, if shipped clean, would be of advantage to the growers, and all others concerned. Indian wheat would then compete on more equal terms with American, Australian and Russian.

No. 425. *Isleworth.*—State the flour made from Indian wheat has an unpleasant earthy flavour, in consequence of the clay with which it is mixed; the removal of this would cause an increase in its value and lead to its more extensive use.

No 441. *Norfolk.*—"I have 100 tons now unloading, 10 lb per bag of 15 stone entire waste; and besides the loss in impurities I have to pay the Great Eastern Railway 8*s.* per ton freight for the rubbish."

No. 444. *Great Yarmouth.*—If Indian wheats were shipped clean, would use a large quantity.

No. 450. *Great Yarmouth.*—"I was the first to introduce Indian wheat in the Eastern Counties, and used about 2,500 tons annually; but, owing to the increasing impurities, I have had to discontinue using them."

No. 455. *Northampton.*—If Indian wheat was sold in sacks, the same as Russian and American, it would be a great advantage.

No. 457. *Northampton.*—As an instance of the effect upon the price of Indian wheat of the impurities mixed with it, mentions the fact that Persian wheats in clean condition are worth 2*s.* per quarter more than wheat from Indian ports of equal quality, but with an admixture of impurities.

No. 465. *Newcastle-on-Tyne.*—The question of weevil should also be dealt with.

No. 466. *Alnwick.*—If Indian wheat was sent to this country clean it would at once command the attention of many millers who do not at present use it.

No. 473. *Nottingham.*—The impurities prevent the use of Indian wheats by the general trade, who cannot deal with them for want of machinery. The loss falls on the Indian cultivator, whose market is restricted.

No. 485. *Oxford.*—Believes the wheats from India will in future play a very important part in our trade. When properly cleaned, few wheats equal the Indian for colour and strength.

No. 490. *Queen's County* —"I cannot too highly commend the adoption of this course of having information direct from the users of the wheats, and of seeking to promote the growth of colonial, specially of Indian wheats. In Ireland they are very little used, the Indian sorts, and I know of no reason save the impurities."

No. 498. *Wellington, Salop.*—Prefers Indian to Californian wheat, and it is only the dirty condition of the Indian that prevents a larger consumption.

No. 503. *Ludlow.*—"I had one lot of Indian wheat to try, and found it quite impossible to work on account of its impurities."

No. 507. *Bath.*—Have almost discontinued the use of Indian wheat, on account of the large admixture of dirt and stones.

No. 522. *Burslem.*—States that there is no doubt as to the quality of Indian wheat being second to none in the world, and that no wheat has suffered so much from the admixture of impurities.

No. 528. *Lichfield.*—The weevil in Indian wheat is even a greater drawback than the dirt. Only water will kill the insect, which remains in the interior of the grain, is ground up, and injures the colour of the flour.

No. 544. *Suffolk.*—Has used considerable quantities of Indian wheat, but has now discontinued using it on account of the impurities.

No. 545. *Lowestofft.*—"We should think the trade would be only too pleased to have some alteration that will lead to a fair business between buyer and seller."

No. 566. *Brighton.*—States that small millers will not put up expensive machinery to deal with the dirt in Indian wheat, and it is to the interest of the largest millers, who have put up machinery, to keep the wheat dirty.

No. 572. *County Tyrone.*—Cannot see why Indian wheat should not be shipped as clean as Californian or Australian, which we use, and pay a higher price for.

No. 575. *Birmingham.*—If the f.a.q. form is abolished, thinks it would be necessary to have some standard of quality, as otherwise the quality might be let down very considerably, although the dirt clause was introduced.

No. 585. *Birmingham.*—Thinks the 2 per cent. clause should be carried out in the interest of the seller as well as the buyer, as it would increase its value. "Am pleased to receive this paper; you are doing good work for England and India, and I beg to thank you."

No. 591. *Waterford.*—Indian wheat, if free from clay, dirt, &c, would be much more used.

No. 595. *Wexford.*—Millers object to the large proportion of clay, stones, &c., contained in Indian wheat, and which can only be dealt with by expensive machinery.

No. 596. *Wexford.*—The large quantity of impurities in Indian wheat is a great drawback to its use in quantity.

No. 599. *Wicklow.*—Suggests that the wheat before being shipped should be put through proper screening and fanning machines.

No. 603. *Bray, Ireland.*—The chief impurity is not the admixture of seeds, &c., but its impregnation with animal matter, urine, &c., which is caused, no doubt, by the cattle treading out the grain.

No. 605. *Wilts.*—English farmers in a damp season like 1888 could use large quantities of Indian wheat if clean, but as they require so much preparation, even in mills possessing the necessary machinery, the trouble and wear and tear almost prevents its use.

No. 621. *Worcester.*—Would use a much larger proportion of Indian

wheats for blending with local wheats, if the former were not so wasteful by reason of their impurities.

No. 626. *Tewkesbury.*—"My mill is a small one, and it is not worth my while to put up the necessary cleaning machinery to deal with the impure Indian wheat. I am therefore unable to use it."

No. 641. *Thornton Dale.*—"Regrets that he is unable to use more Indian wheat on account of its impurities."

No. 646. *Huddersfield.*—The Indian wheats would be more largely used if shipped free from dust, &c., and would sell for a much higher price.

No. 648. *Bingley.*—Does not find it pay to use Indian wheats unless considerably cheaper than others, owing to the elaborate cleaning process needed to rid them of impurities. The large quantity of earth some varieties contain is very difficult to remove, and causes specky flour which retards their free use.

No. 652. *Leeds.*—"We find Indian wheats both useful and profitable, and trust you will do all you can to promote the sending of them in a clean condition."

No. 654. *Castleford.*—Fully endorses Mr. Forbes Adam's letter, and holds Indian wheats in high esteem, and looks upon them as capable of being used in this country to advantage.

No. 665. *Sheffield.*—"The dust and dirt increases in percentage as the season advances, and the rule to buy f. a. q. is very unreasonable, as to-day I might buy a parcel of wheat, February shipment, f. a. q., and expect it to be similar to wheat I am now receiving, but I might get it 3*s.* per quarter worse, although if it was equal to the average for the month I should have no remedy."

No. 670. *Birstall.*—Is in favour of a 2 per cent. form of contract, and will urge the subject upon their Chamber of Commerce.

No. 671. *Driffield.*—Would be pleased for the 2 per cent. contract to be made binding, the present f. a. q. form is a great source of annoyance.

No. 673. *York.*—Considers the choice white Bombay one of the finest quality wheats obtainable; its worst feature is the mixture of stones, which are more difficult to extract than any other impurity.

No. 680. *Great Driffield.*—States that the condition in which Indian wheats are delivered depreciates their value from 2*s.* to 3*s.* per quarter on the average.

No. 681. *Hull.*—"We use 8,000 to 9,000 quarters annually. The admixture of dirt is only one objectionable feature in the f. a. q. form. A much worse is that the shippers sometimes ship a bulk largely mixed with unsound and heated grain, making it utterly unfit for use. This unsound wheat is by far the greatest source of loss to us; dirt we can calculate, but treachery we cannot. We certainly think, to ensure confidence, the contract should read, *limiting the admixture of dirt, seeds, &c., and grain other than sound wheat to 2 per cent.*

No. 685. *Elland.*—Uses about 1,000 quarters per week; if clean would use 1,500 quarters of Indian wheat per week.

No. 688. *Wetherby.*—"The Indian wheats are very good in quality, but come in such an unclean state that we do not use a fourth of what we should use if in a proper condition."

No. 691. *Doncaster.*—"If Indian wheats were shipped free from impurities it would render useless the vast and expensive plants of machinery designed, manufactured, and erected for the purpose of cleaning and purifying Indian wheats. We think this demands some consideration. The manufacture of wheat cleaning appliances is, as a matter of fact, a very important industry."

No. 695. *Hull.*—Millers in buying Indian wheat do not buy the dirt, &c., they reckon so much off for waste in buying. If they were shipped cleaner, there is no doubt they would fetch more money, as they would compare more favourably with other foreign and home wheats.

No. 698. *Keighley.*—If the various kinds of Indian wheat were sent over separately and clean, an increased quantity would be used.

No. 699. *Leeds.*—Indian wheats would be much more generally used if clean, none but the best fitted up mills can use them (as they are) to advantage.

No. 710. *Leeds.*—The immense quantity of stones in Indian wheat is a great detriment to their use, as they cannot be all got out.

No. 712. *Sheffield.*—With improved culture and shipment Indian wheat will become very popular in England, and a wholesome competitor with America.

No. 722. *Rotherham.*—Some of the Indian wheats are the best wheats on the market, and if they were sent free from dirt they would command a better price than many of the foreign wheats.

No. 731. *Batley.*—The grit, stones, and heated grains are most serious objections to Indian wheats.

6.

Letter from MESSRS. MARSHALL, SONS, & CO., *Limited, to the Secretary of State for India, dated 29th January 1889.*

Knowing the interest you evince in the Indian wheat question, we take the liberty of bringing to your notice our efforts to improve the quality of Indian wheat, by endeavouring to introduce suitable and efficient machinery for the proper manipulation of the grain, and we venture to think a brief account of our experience will not be uninteresting to you.

Attempts to introduce steam threshers.

The advantages possessed by India as a wheat-growing country—as regards climate and cheap labour—induced us, five years ago, to send out a set of machinery with a competent mechanic to carry out experiments in steam thrashing with the object of adapting our machinery to the requirements of the country, and to practically demonstrate to the natives the advantages that would accrue to them by the introduction of suitable thrashing and cleaning machinery as used by all the other corn growing countries of the world. This first machine did not fulfil all the conditions required, inasmuch that it did not chop up the straw into "bhusa" as fodder for the cattle. But from experience gained on the spot, we were soon able to bring out a machine to efficiently thrash the Indian wheats and at the same operation chop and bruise the straw, and this machine is a pronounced success.

We may explain to your Lordship that we did not enter upon this undertaking without anticipating many formidable drawbacks, as we know the antipathy of the native is always at first much against any innovation of this kind, but we experienced obstacles where we least expected them. We naturally thought the merchants on the other side would only be too glad to be able to send home properly thrashed and clean wheats, and would help us in the work we had taken in hand, but to our surprise we only met with encouragement from comparatively a few firms. It is, no doubt, a question of £ *s. d.*, and at present it probably pays them better to export the wheat with impurities. In no case would a firm undertake to send home a cargo of steam thrashed wheat at their own risk, although we had staked so much in the matter. But surely it is only a question of looking a little way ahead to clearly see the benefits that would eventually result to all concerned by exporting clean wheats, as it must be apparent if Indian wheats, as at present exported, can compete in the European markets, that by sending clean and well dressed grain India can undersell all the other corn-growing countries.

Since commencing this work we have sent out machinery every season, and for the last two years our operations have been confined to the Punjab, where we have succeeded in thoroughly satisfying the zemindars. Last season we thrashed all the wheat on the estate of one of the Sikh high priests, at Amritsar, and this, as your Lordship will be aware, at once removed any superstitious objections that may have existed. So far we are satisfied with the progress we have made, but we have not succeeded in selling any machinery of this description to natives, and the time when we shall see any returns for the several thousand pounds we have expended seems in the remote future.

Many Anglo-Indians have told us we have undertaken a work we shall never succeed in, but from the knowledge we have been able to obtain of the native character, we have confidence that it is only a question of time and energy. We know that when railways were first promoted in India it was thought the different castes would never mix in the carriages, and that it would be necessary to have a separate compartment for each caste on every train; we know how different the result has been. Our experience is that it is more a question of rupees with the natives. Once *convince* them that there is money in an innovation of this kind, and they forthwith take it up. We have only to look at the large number of cotton mills, cotton presses, oil mills, flour mills, &c., owned and worked by natives in various parts of India to prove this, and as the railways continue to openout tracts of valuable land, thus enabling cultivators to convey their products to the ports from places where it has hitherto been impossible owing to want of carrying facilities, the demand for machinery of various kinds must increase every year.

It has also been argued that the zemindars will not be able to afford our machinery (₹6,000 to ₹8,000 per set, delivered on the spot), but we do not believe this; there are a very great number of the zemindars who are well able to buy such machinery, and, in cases where the farms are too small, a few ryots can amalgamate and buy a set. This system is much in vogue in several parts of Europe.

Taking into consideration the great and increasing want of steam thrashing in India, and as there can be no doubt as to its ultimate

Better prices for clean grain needed.

success when once introduced, one would reasonably expect a demand for such machinery at no distant date, but it has now become a question for us to consider whether it will answer our purpose to expend any more money and energy until some of the drawbacks in our path are removed. We fear we can hardly hope to succeed until the growers know they will get a higher price for clean and pure grain. The merchants in India, refusing to give better prices for clean wheats, retard our efforts, as well as injure the future wheat trade of India. We have frequently been told by zemindars, "Why should I buy your machinery and produce perfectly clean wheat, when I should not get a higher price for it, and should lose the 5 per cent. or 6 per cent. I have to allow to the buyer for the dirt, &c." ? and we cannot but think there is a certain amount of reason in those remarks. We have even had cases where we have thrashed wheat for a ryot, and produced a sample beautifully clean and bright that would have surprised the merchants in Mark Lane, and he has afterwards mixed dirt with it. We mention this to show your Lordship that the fact of the merchants not being with us is a serious drawback, and our opinion is, that if the percentage of dirt and impurities were reduced to the same standard as for America, the demand for the Indian article would finally increase, and our difficulties in the introduction of machinery greatly decrease.

The Indian wheats do not at present realize anything like their intrinsic value owing to the admission of dirt, &c., and it is only the large millers who can afford to purchase the special machinery necessary for cleaning the Indian wheats who can use them at all, and many small millers, who have not facilities or means to introduce this special machinery, are debarred from employing them. We also understand even the large millers cannot use the Indian wheats in such a large proportion as they otherwise would providing they could get them clean. Further, the freight on something like 30,000 tons of useless dirt would be saved every large export season.

The growers would get a higher price for their grain, and would get their produce to market quickly after harvest, and consequently get their money earlier.

The cost of thrashing by machinery is less than by the present primitive mode.

By the introduction of machinery there would be but little risk of the crops being destroyed by fire through incendiarism or otherwise, thus obviating a source of great anxiety to cultivators in many parts of India.

We must apologise for trespassing so much upon your Lordship's valuable time, but we should like to mention that, in addition to sending out the machines with mechanics to work them, we also sent one of our representatives to thoroughly study the whole question.

Appendix K.

1.

From VISCOUNT CROSS, *to the Government of India, No. 128 (Revenue), dated 26th December 1889.*

In continuation of my Despatch No. 116 (Revenue) of the 28th ultimo, enclosing a copy of a letter, with its accompaniments, from Mr.

James Smith, relating to the introduction of corn elevators into India, I herewith forward a copy of a letter of the 27th idem, on the same subject, received from Mr. John McDougall, and also a copy of a letter, with its enclosure, of the 14th November last, received from the London Corn Trade Association, reporting the action taken by them in concert with the Liverpool Corn Trade Association in establishing a revised reference standard of purity for Indian wheats, which they hope will lead to an improvement in the quality of the grain imported from Calcutta, Bombay, and Karachi into the United Kingdom.

2. It is desirable to give the widest official publicity to this communication. Mr. McDougall's letter, while dealing with the new standards of the London and Liverpool Corn Trade Associations, will be chiefly useful in connection with the proposals made by Mr. James Smith, already before Your Excellency's Government.

2.

From JOHN McDOUGALL, ESQ., *to the Secretary of State for India, dated 27th November 1889.*

I have the honour to inform Your Lordship that the London and Liverpool Corn Trade Associations have (after considerable discussion) come to an agreement in reference to the terms of contract regarding impurities in Indian wheats.

They have had the average samples of the 1888 crop tested, and the results show the impurities to be somewhat higher than the analysis I made of the 1887 crop for Your Lordship. New standard London Corn Trade.

Having divided the total shipments of the year into two portions, *viz.*, the *ante*-monsoon (new crop to 30th June) and *post*-monsoon (1st July to the end of the season), the average impurities have then been taken as the limit that will be allowed.

This will not in any way cause a higher standard of purity in Indian wheats. In fact, it allows a greater degree of impurity in the earlier shipments, although it may prevent the occasional shipment of parcels of gross admixture.

It is with extreme regret that I report this lame result of all that has been done by the India Office in the endeavour to encourage the merchants and millers of the United Kingdom to demand a higher standard for Indian wheats, and I would suggest that attention should now be given to what may be done in India.

The great facilities provided in America and South Russia for the cheap stowage and transit of grain has been most beneficial to the development of their immense trade.

In the United States and Canada elevators are erected at almost every railway station in the neighbourhoods where grain is produced. This not only provides for cheap stowage, but also for the grading into standards, qualities, and the issuing of warrants, which enable the holder to readily sell his parcel of grain without the necessity of carrying or showing samples.

At a railway or other depôt an elevator is erected, its capacity being regulated by the necessity of the neighbourhood. An official is appointed with the necessary standard samples for comparison. The farmer nst ead of having to erect a barn or store, takes his grain to the elevator,

where it is received, classified, and stored, and a warrant given him stating the quantity and quality; and he can then go to his market, sell or hold as he may see best, or he may get an advance from his banker or merchant on the security of his warrant. The official is responsible to deliver the quantity of wheat, &c., of equal quality, but not necessarily the exact wheat that was delivered to him.

In America the wheat trade is all done in bulk, labour being very costly, and elevators of great capacity are used.

In India nearly all the wheat trade is in bags, and labour being cheap, the need for machinery, &c., to save labour is not so necessary, and a floor space to gather together a few hundred tons, so as to make a fair average sample, would probably be all that would be required.

But the principle involved in having a public store where each parcel of wheat would be classified, and the issuing of warrants to avoid the showing of samples at market, would do much to cause the grower to take care in the harvesting and thrashing of his crop, so as to justify its being placed in the highest grade of its class.

I cannot advise as to whether this matter should be conducted by Government officials or by the agents of firms. If by the latter, there should certainly be no monopoly. But as the Government has so large an interest in the railways, it would probably be desirable that they should keep the handling of the grain in their own hands.

It would very soon be decided if it would be necessary to erect machinery for the cleaning of grain, and when the natives found a clear distinction made between clean and unclean grain, they would themselves soon find the means of producing clean grain.

I consider the question of pure wheat of such vital importance to India and also the labouring classes of the country, that I have no hesitation in submitting these suggestions to Your Lordship, and in asking your best consideration of them.

3.

London Corn Trade Association, to the Secretary of State for India, dated 14th November 1889.

I have the honour of enclosing you copy of a letter which has been addressed by this Association to the Bombay Chamber of Commerce, the Calcutta Wheat and Seed Trade Association, and others connected with the trade, with regard to the "impurities" in Indian wheats.

I am requested to say that it will thus be seen that this Association has not been unmindful of the hope expressed by Your Lordship at the meeting last May at the India Office, that some endeavour should be made to reduce the "impurities" in Indian wheats.

4.

London Corn Trade Association, to the Secretaries, Bombay Chamber of Commerce, to Calcutta Wheat and Seed Trade Association, &c., dated 14th November 1889.

Action of London Corn Trade, new standard.

At a meeting held last May at the India Office, at the invitation of Viscount Cross, who took the Chair, it was felt that an effort should be

made to improve, if possible, the "impurities" in Indian wheat. With this view this Association has had the standard samples of the various qualities of the crop of 1888 of Indian wheat analysed by Mr. Bernard Dyer, with results as per his report enclosed.

Taking into consideration the statement of the East Indian Wheat Committee of this Association, which was read at the said meeting in reply to the reports and papers issued by the India Office, this Association, in conjunction with the Liverpool Corn Trade Association, have had several meetings with a view to an improvement compatible with the exigencies of the trade here, and the actual condition in which wheat is grown and gathered in India; and it has been agreed by the two Associations that two reference standard samples shall be made up of each of the descriptions of wheat named in the annexed table, solely for the guidance of the East Indian Wheat Committee of this Association in making up the standards as to "impurities" only.

Ante-monsoon and *post*-monsoon reference standard samples will be made up, and the arrangement will come into force with the new crop of 1890.

It is hoped that this will lead to an improvement in the cleanliness of Indian wheat, and this Association trusts you will use your influence to bring about this much-to-be-desired result.

Description of Wheats.	*Ante*-Monsoon.		*Post*-Monsoon.	
	Impurities.	Of which may be dirt.	Impurities.	Of which may be dirt.
No. 1 Club Calcutta	4 per cent.	1½ per cent.	4½ per cent.	2 per cent.
No. 2 Club Calcutta	4 ,,	1½ ,,	5 ,,	2 ,,
Hard Calcutta	3 ,,	1½ ,,	3½ ,,	2 ,,
Soft Red Calcutta	4½ ,,	2 ,,	5½ ,,	2½ ,,
No. 1 Club Bombay	3 ,,	1½ ,,	2½ ,,	2 ,,
Red Club Bombay	3 ,,	1½ ,,	3½ ,,	2 ,,
Soft Red Bombay	3 ,,	1½ ,,	3½ ,,	2 ,,
Hard Red Bombay	3 ,,	1½ ,,	3½ ,,	2 ,,
Hard White Bombay	3 ,,	1½ ,,	3½ ,,	2 ,,
Soft Red Delhi	4 ,,	1½ ,,	5 ,,	2 ,,
Soft White Delhi	4 ,,	1½ ,,	5 ,,	2 ,,
White Jubbulpore	3 ,,	1½ ,,	3½ ,,	2 ,,
Atbara	3 ,,	1½ ,,	3½ ,,	2 ,,
Soft Red Kurrachee	5 ,,	1½ ,,	7 ,,	2 ,,
Soft White Kurrachee	5 ,,	1½ ,,	7 ,,	2 ,,

N.B.—*Ante*-Monsoon shall mean shipments of the New Crop to 30th June.

Post-Monsoon shall mean shipments from 1st July to remainder of the season's shipments.

With the exception of Soft Red and Soft White Kurrachee, when the period for these qualities shall mean shipments of the New Crop—

Ante-Monsoon to 30th September.

Post-Monsoon from 1st October to the remainder of the season's shipments.

No. 4.

Analyses of Indian Wheats (viâ *Canal*) *of the Crop 1888, by* MR. BERNARD DYER, *B.Sc. (Lond.), F.I.C., F.C.S., F.L.S., Analyst to the Essex, Leicester, Devon, and West Glamorgan Agricultural Societies; the Notts and Sevenoaks Chamber of Agriculture, &c.; Official Analyst to the Association.*

Month of Shipment.	CALCUTTA.										BOMBAY.												
	No. 1 Club.			No. 2 Club.	Hard.			Soft Red.			No. 1 Club.	Red Club.			Soft Red.			Hard Red.			Hard White.		
	Barley, &c.	Dirt.	Total other than Wheat.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Barley. &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.
April	...	...	...	4·27	1·02	2·36	3·38	2·04	3·12	5,16	3·23	...	...	...	0·08	0 59	0·67	0 91	2·35	3·26	...	...	...
May	1·62	2·27	3 89	4·12	...	...	...	1·76	2·82	4 58	6·55	0·75	3·19	3·94	0·09	2·23	2·32	...	...	...	...	...	...
June	2·65	1·85	4·50	5·76	1·92	2·42	4·34	1·77	3 70	5·47	3·75	0·64	1·60	2·24	0·17	3·79	3·96	...	...	...	...	...	...
July	...	...	...	5·27	...	...	...	2 21	2·26	4·47	3·51	...	...	...	1·28	1·26	2·54	...	...	...	...	...	...
August	2·38	2·18	4·56	5·66	1·05	1·18	2·23	2·77	1·95	4·72	3·84	...	...	...	...	...	...	...	...	...	...	...	...
September	2·25	2·05	4·30	4·52	1·15	1·76	2·91	2·07	2 65	4·72	3·35	...	...	...	1·42	1·28	2·70	...	...	...	...	...	...
October	...	...	...	4·84	0·94	1·51	2·45	1·81	3 10	4·91	3·23	...	...	...	...	...	...	0·18	2·61	2·79	0·26	2·76	3·02
November	...	...	...	7·50	1·11	4·28	5·39	2·19	2·31	4·50	4 66	...	...	...	1·16	1·10	2·26	0·15	2·13	2 27	0·13	2·95	3·08
December	...	...	...	4·96	...	...	...	1·49	3·24	4·73	3·38	...	...	...	...	...	...	...	...	...	0·15	2·60	2·75
January	...	...	...	4·30	...	...	...	...	...	...	2 76	...	...	...	0·24	5·33	5·57	...	...	...	...	...	...
February	...	...	...	...	...	...	...	...	...	...	2·71	...	...	...	...	...	...	...	...	...	...	...	...
March	...	...	...	...	...	...	...	...	...	...	3·19	...	...	...	...	...	...	...	...	...	...	...	...
Average	2·22	2·09	4·31	5·12	1·20	2·25	3·45	2·01	2·79	4·80	3·68	0 69	2·39	3·08	0·63	2·23	2 86	0·41	2·36	2·77	0·18	2·77	2·95

N.B.—The term "Barley, &c," used above, includes all grain of intrinsic value, such as barley, oats, peas, linseed, &c. The term "Dirt" includes earth, chaff, and miscellaneous weed seeds.

Analyses of Indian Wheats (viâ *Canal*) *of the Crop 1888, by* MR. BERNARD DYER, *B.Sc. (Lond.), F.I.C., F.C.S., F.L.S., Analyst to the Essex, Leicester, Devon, and West Glamorgan Agricultural Societies; the Notts and Sevenoaks Chamber of Agriculture, &c.; Official Analyst to the Association*—continued.

Month of Shipment.	KURRACHEE.						DELHI.						JUBBULPORE.			ATBARA.		
	RED.			WHITE.			SOFT RED.			SOFT WHITE.			WHITE.			—		
	Barley, &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.	Barley, &c.	Dirt.	Total other than Wheat.
April	5·68	0·78	6·46	8 11	1·38	9·49	...	...	...	..	...	...	...	...	...	...	...	...
May	2·40	1·34	3.74	7·27	1·44	8·71	.	...	...	2·54	1·43	3·97	1·25	3 01	4·26	0·41	2 53	2·94
June	6·44	0·92	7·36	3·61	0·93	4·54	...	...	...	4 44	1·08	5 52	2 19	1·47	3 65	...	...	...
July	...	...	...	5·70	1·59	7·29	...	...	...	3 85	2·20	6·05	1 48	2·70	4·18	...	...	...
August	...	...	...	5·49	1·38	6·87	...	...	...	3 31	2 97	6·28	2·95	1·14	3·09	...	...	...
September	6·11	1·42	7·53	5 79	1 29	7·09	2·88	1·03	3·91	3 09	2 57	5·66	0·86	2·58	3·44	0·33	2·57	2·90
October	6 73	1·03	7·76	6·14	0 86	7·00	3·28	0·99	4 27	2·62	2·35	4·97	...	...	...	0·40	2·59	2·99
November	6 46	0·94	7·40	6·20	2 37	8·57	...	...	. .	2·90	1·98	4·88	1·11	1·56	2 67	...	...	...
December	5·73	1·29	7·02	6·19	1 24	7·43	...	...	...	2·72	2·11	4·83	...	...	...	...	...	...
January	7·25	1·06	8·31	5·41	1·75	7·16	3 45	1·14	4·59	3 23	3·05	6·28	...	...	...	0·26	2·40	2·66
February	8·39	0·96	9·35	7·02	1·01	8 03	3·75	0·98	4·73	2·68	1·68	4·36	...	...	...	...	...	...
March	7·41	2·70	10·11	6·51	1·27	7·78	2·64	1·91	4·65	3·85	2·90	6 75	...	...	...	...	...	...
Average	6 26	1·24	7·50	6·12	1·37	7·49	3·20	1·91	4·41	3·20	2·21	5·41	1 64	2 08	3·72	0·35	2·52	2·87

N.B.—The term "Barley, &c." used above, includes all grain of intrinsic value, such as barley, oats, peas, linseed, &c. The term "Dirt" includes earth, chaff, and miscellaneous weed seeds.

17, GREAT TOWER STREET, LONDON,
2nd October 1889.

BERNARD DYER,
Public Analyst.

5.

Nos. 220—225 C.—19-3, dated 31st January 1890.

Endorsed by the REVENUE AND AGRICULTURAL DEPARTMENT.

COPY of the despatch No. 128, dated 26th December 1889, from the Secretary of State and of its enclosures forwarded to the Local Governments and Administrations noted in the margin for information, in continuation of Circular No. 122-127 C.—Agriculture, dated 6th instant.

Madras, Bombay, Bengal, North-Western Provinces and Oudh, Punjab, and Central Provinces.

No. 226 C.—19-3.

Copy forwarded to the Public Works Department for information, in continuation of Office Memorandum No. 129 C., dated 7th instant.

Appendix L.

1.

Extract from the Report of the Bombay Chamber of Commerce, for the year 1889.

Summary of action taken 1889.

As the result of the agitation initiated by this Chamber in 1886 and consistently supported by His Excellency the Governor of Bombay, a conference of those interested in the question of the improvement in the cleaning of Indian wheat was held at the India Office on 8th May last under the auspices of Her Majesty's Secretary of State for India. At that conference a statement was read on behalf of the London Corn Trade Association which, in the opinion of your Committee, contained so many mis-statements both as to fact and theory, and was so misleading in purport, that they decided to address His Excellency the Governor on the subject, with the view of recording their protest against the arguments and figures used, and, if possible, leading to further action with the view of improving the cleanliness of Indian wheat. Owing, no doubt, to the promptitude with which the matter was taken up and discussed by your Committee, and the unanswerable character of their arguments, the London Corn Trade Association have so far modified their views that in a circular, dated 14th November, they have intimated that they had taken measures to get the various qualities of Indian wheat analysed, and as the result of that analysis had prepared a table showing the extent of impurities in the standard samples which the Association would recognise as allowable in shipments made before and after the monsoon. This table, however, so distinctly recognised a larger proportion of impurities than there was any necessity for doing, that your Committee addressed the London Corn Trade Association on the subject by the return mail pointing out that in nearly every description of Bombay wheat, with the exception only of No. 1 Club and Red Club, the impurities allowed, even for *ante*-monsoon shipments,

were in excess of the adulteration shown by their own analyses. This, the Committee showed, simply amounted to recognising a standard of impurity in excess of existing conditions, and so far therefore from assisting the movement towards greater cleanliness would really be retrograde in effect. The Committee strongly urged the London Corn Trade Association to reconsider the subject and advocated a two per cent. refraction as one which would induce efforts being made to attain greater purity and one at the same time which would be perfectly attainable without the necessity of extensive mechanical appliances for cleaning purposes. To this communication there has not as yet been time for receipt of a reply, but the Committee trust that this matter will not be allowed to rest, and that future Committees will continue to agitate for the introduction of a basis of contract which will ensure Indian wheats being exported in a cleaner and therefore more merchantable condition than has hitherto been the case.—(*Appendix* HH.)

2.

Bombay Chamber of Commerce, to the Governor of Bombay, dated 14th June 1889.

Protest against London Corn Trades Statements at India Office Conference.

My Lord,—Sensible of the active interest you have always taken in, and the efforts you have made to, aid the development of the wheat trade of this port, the Committee of the Chamber of Commerce take the liberty of addressing you regarding the conference on the subject of impurities in Indian wheat held at the India Office on 8th May, a report of which, although not yet officially published, Your Lordship has doubtlessly observed in the public press.

From a perusal of the proceedings it is apparent that the adoption of a proposal—which originally emanated from this Chamber—that all arrival contracts made in England for the sale of Bombay wheat should be based on a refraction of not exceeding 2 per cent. of dirt and other impurities was not carried owing to the opposition of the London Corn Trade Association, who stated their objections in a paper of some length, but of which, for the purpose of this letter, it will be sufficient to quote only the concluding summary of reasons. These, for convenience of reference, my Committee have numbered as follows :—

(1) Seeing, therefore, that the natural condition at present of Indian wheats is to contain about 4 per cent. of admixture on the Bombay side and 5 per cent. on the Calcutta ;

(2) That, under the circumstances, it is not practicable to induce the Indian shippers to change their system of purchasing, and instead of buying on the above natural refractions, to introduce an artificial basis of a 2 per cent. refraction ;

(3) That buyers, *practically*, are not prepared to pay a proportionately higher price for cleaner wheats ;

(4) That the system of selling of analysis here is altogether impracticable and unadvisable ;

(5) That the conditions of the Indian wheat trade although slowly are gradually improving ;

(6) That India ships all her wheat available for export year by year;

(7) And that her development—in this branch at least—is not prevented by the present condition of wheats;

(8) That interference of Government in questions of contract as between seller to buyer is unadvisable—

(9) Our opinion is that it is not advisable or desirable to try and force sudden and radical changes in the natural condition of a trade; but that it is preferable to let the improvement come gradually out of the trade itself, taking it for granted that merchants, sellers and buyers, shippers and consumers, &c., are too keenly alive to their interests to allow any opportunity for improvement in their trade, when such becomes advisable, to pass by.

Were the Committee addressing only the members of this Chamber, experts in the trade and practically familiar with its basis and conditions, it would be sufficient to point out that these reasons are one and all contrary to ascertained facts and experience, and that the conclusions drawn from them are necessarily erroneous and misleading. But that the arguments of the London Corn Trade Association may not find official record without criticism, my Committee deem it desirable to deal with each separately, though as concisely as possible.

(1) The statement that the natural condition at present of Indian wheats is to contain about 4 per cent. of admixture on the Bombay side and 5 per cent. on the Calcutta, is, so far as Bombay is concerned, absolutely incorrect, and, judging from the evidence officially collected, is equally erroneous as regards Calcutta. These figures no doubt represent the admixture as shipped—practically under the compulsion of the objectionable form of contract maintained by the London Corn Trade Association—but the Committee of this Chamber unhesitatingly assert that even under the primitive mode of preparation hitherto prevalent, and without special cleaning machinery, the natural condition of the bulk of Bombay wheats as they could be delivered by the farmers would show less than 2 per cent. of admixture.

(2) The misleading nature of reason (1) relegates this to the same position, but how it is open for the London Corn Trade Association to allege that "it is not practicable to induce Indian shippers to change their system of purchasing" in face of the unanimous request of the entire body of exporters from Bombay that the trade should be based on a 2 per cent. refraction, my Committee are unable to explain.

(3) That buyers are not prepared to pay a proportionately higher price for cleaner wheats, may be partially correct, so far as speculators are concerned. For their purposes, no doubt, the widest form of contract giving purchasers the most limited possible power of rejection on the score of quality is the easiest to manipulate, but the replies received to the India Office circular of 31st December 1888 afford most over-

whelming evidence to the contrary from the millers of the United Kingdom, who must be regarded as the real or ultimate buyers.

(4) The proposal that 2 per cent. shall be the limit of admixture does not necessarily imply the analysis of every shipment, as practical experience enables experts to arrive at an exceedingly close estimate without the necessity of having recourse to exact analysis. But independently of this, if the Liverpool Corn Trade, who handle three-fourths of the Bombay wheat imported into the United Kingdom, find no difficulty in adopting a 2 per cent. refraction, why should London find it impracticable to deal with one-fourth? Moreover, the trade in Bombay itself, so far as future delivery contracts go, is entirely based on exact analysis which works well and without special friction.

(5) That the conditions of the Indian wheat trade although slowly are gradually improving, is not an argument, even if entirely correct, strictly applicable to the real point at issue, but neither recent statistics nor the other reasons advanced by the London Corn Trade Association themselves bear this out. In relation to the latter, in fact, the statement embodies an obvious contradiction. If the conditions are gradually improving they are susceptible of further immediate and accelerated improvement which reason No. (2) says in effect they are not.

(6) That India ships all her wheat available for export year by year, is equally irrelevant. No statement to the contrary, so far as my Committee are aware, has ever been advanced. What this Chamber of Commerce asserts as representing the wheat exporters of Bombay is, that India does so export but at less than the legitimate value of the produce, both by the lower average price which dirty as compared with clean wheat commands, and also by the loss incurred in transporting and dealing with a large percentage of dirt and other impurities. It is scarcely necessary to point out that the deficiency in value which thus ultimately accrues to the producer must tend to restrict production.

(8) Calls for no special remark from the Bombay Chamber of Commerce, as it has never advocated Governmental interference between buyer and seller in this connection.

(9) To deal with the final conclusions arrived at by the London Corn Trade Association, my Committee are quite at one with them that it is not desirable to force sudden and radical changes on trade, but that it is preferable to let the improvement come out of the trade itself, taking it for granted that merchants, sellers and buyers, shippers and consumers, are too keenly alive to their interests to allow any opportunity for improvement in their trade—when such becomes advisable—to pass by. This, the Committee of the Chamber venture to say, most accurately describes the character and origin of the movement for a modification of the terms of London arrival contracts in Indian

wheats. The demand originates not in one section of the trade but from the majority, who are most deeply and vitally interested, the shippers who virtually also represent the producers on the one side and the ultimate buyers or consumers on the other. The objection to the improvement comes only from a minority of the middlemen, and it is not surprising if the character of this obstruction should have given rise in some quarters to suggestions of legislative interference. These suggestions, however, this Chamber has never countenanced, but still holds that Government have it in their power to enormously facilitate and benefit trade by collecting and furnishing information and affording means of discussion in matters of leading interest and moment to the general welfare of the country. It is notably so in this instance. As Your Lordship is aware, this Chamber addressed the London Corn Trade Association direct, representing the advisability of altering the form of contract, so as to afford an inducement to improve the quality of the wheat shipped from India. In declining to accept the suggestions of the Chamber the Association gave no reasons for so doing, but their reasons having been evolved at a conference held recently under the auspices of Her Majesty's Secretary of State for India, the Committee of the Chamber trust Your Lordship may have an opportunity of recording these criticisms on them in the same quarter.

Thanking Your Lordship for the extreme courtesy and attention with which the representations of the Chamber on this and other subjects have hitherto been received, and venturing to hope that Your Lordship will continue unabated your interest in and exertions for the improvement in the quality of Indian wheat,

I have, &c.,

F. FORBES ADAM,

Chairman.

JOHN MARSHALL,

Secretary.

3.

Bombay Chamber of Commerce, to the London Corn Trade Association, dated 6th December 1889.

Further appeal to London Corn Trade Association.

DEAR SIR,—I am directed by the Committee of the Chamber to acknowledge the receipt of your circular letter of the 14th ultimo, enclosing a tabulated statement of the result of analyses by Mr. Bernard Dyer of various descriptions of Indian wheat, and stating that it has been agreed by your Association, in conjunction with the Liverpool Corn Trade Association, that two reference standard samples shall be made up of each description of Indian wheat for the guidance of the East India Wheat Committee in making up standards as to impurities. You further

annex a statement showing, my Committee presume—although your letter does not definitely say so—the extent of impurities which these standards shall be assumed to contain; and you conclude your remarks with the hope that this will lead to an improvement in the cleanliness of Indian wheat, and requesting the influence of this Chamber in bringing about this much-to-be-desired result. As this Chamber was the first to take the initiative in the endeavour to promote additional cleanliness in Indian wheat, you may rest assured that everything it can do will be done to promote that object. At the same time my Committee regret to say that they cannot consider the action of your Association likely to contribute materially to that end.

I am directed to point out to you that, in the case of nearly every description of Bombay wheat, the extent of the impurities, which your standards are intended to recognise, considerably exceeds the result of Mr. Bernard Dyer's analyses. In other words, so far from the standards being likely to enforce greater cleanliness, they allow a margin for an increased percentage of dirt and other impurities. This is very apparent from the following comparison showing, in the first column, the average total impurities as compared with the percentages fixed :—

	Impurities as per analyses.	Proposed percentages in *ante*-monsoon shipments.	Proposed percentages in *post*-monsoon shipments.
No. 1 Club Bombay	3·68	3	3½
Red Club Bombay	3·08	3	3½
Soft Red Bombay	2·86	3	3½
Hard Red Bombay	2·77	3	3½
Hard White Bombay	2 95	3	3½

You will perceive that, with the exception of No. 1 Club and Red Club, the average analyses give throughout smaller total quantity of impurities than the minimum allowed in your table for *ante*-monsoon shipments, which is surely an unnecessary margin to give.

My Committee are strongly of opinion that for *ante*-monsoon shipments at least the percentage of impurities should not be fixed at over 2 per cent., as there can be no question that wheat can easily be cleaned down to that point, and, indeed, could now be bought easily, were there any inducement for shippers to adhere to that limit.

I am, &c.,

JOHN MARSHALL,

Secretary.

4.

Extract from the Report of the Bombay Chamber of Commerce for the year 1890.

Summary of action taken in 1890.

As mentioned in the last Annual Report, the previous Committee of the Chamber had carried on a vigorous correspondence with the representatives of the Liverpool and London Corn Trade Associations and the Government of Bombay, respecting the desirability of raising the standard of cleanliness in contracts for Indian wheat at the ports mentioned.

The Liverpool Association, as already reported, made no difficulty about meeting the views of this Chamber, but, in London, after a series of analyses, a table was prepared by the Corn Trade Association which, this Chamber considered, allowed a much heavier refraction on Indian wheat than the actual condition warranted. The Committee accordingly represented their views to the London Association in December 1889, and it was not until February 1890 that any reply was received. In their letter, the Committee regret to say, the London Corn Trade Association state that after having carefully considered the question of impurities in the various kinds of Indian wheats, and after hearing the evidence of sellers and buyers, they did not see their way to move further in the matter at present. There seems very little hope, therefore, of any advance being made in this important subject for some time to come, as until buyers at home insist upon being supplied with the cleanest possible wheat, shippers from this side have no inducement to export anything superior in cleanliness than the refraction provided for the regular contracts current in the trade.—(*Appendix S.*)

5.

London Corn Trade Association, to the Bombay Chamber of Commerce, dated 7th February 1890.

Refusal of London Corn Trade Association.

DEAR SIR,—I am directed by the Committee to acknowledge the receipt of your letter of the 6th December, and to state, in reply, that they carefully considered the question of impurities in the various kinds of Indian wheats, and after hearing the evidence of sellers and buyers, they did not see their way to go further in the matter of refraction at present.

INDIAN WHEAT TRADE.

PART III.

PAPERS RELATING TO THE INTRODUCTION INTO INDIA OF THE SYSTEM OF GRAIN ELEVATORS IN VOGUE IN THE UNITED STATES OF AMERICA AND IN CANADA.

1.

The Government of India, to Local Governments and Administrations, Circular No. 122-127 C.—(Agri.), dated 6th January 1890.

Circular forwarding papers for opinion.

I am directed to forward, for information and consideration, the accompanying copy of a despatch and of its enclosure, received from Her Majesty's Secretary of State for India, relating to the formation of a company for the introduction of grain elevators into India.

2. His Excellency the Governor General in Council will, in the first instance, be glad to be favoured with the views of as to the encouragement which may properly be given to the company, and I am to suggest that the opinions of the Directors of the Department of Land Records and Agriculture, the Chambers of Commerce and of other authorities, official or non-official, whom may think it advisable to consult may be obtained and forwarded to the Government of India with as little delay as possible.

2.

Government of India, Revenue and Agricultural Department, to the Secretary to the Government of India, Public Works Department, No. 129 C., dated 7th January 1890.

The undersigned is directed to forward, for information and consideration, a copy of a despatch,* and enclosure, received from the Secretary of State, relating to the formation of a company for the introduction of grain-elevators into India, and to say that this Department will be obliged if the Public Works Department will obtain the opinion of the Railway Companies mentioned in page 3 of Mr. Smith's letter.

* No. 116 (Revenue), dated 28th November 1891.

3.

From LORD CROSS, *to the Government of India, No. 116, dated 28th November 1889.*

Forwards Mr. Smith's proposals for introduction of grain elevators.

I forward herewith a copy of a letter, and its enclosure, of the 17th September last, received from Mr. James G. Smith, of the firm of Messrs. Ritchie, Stewart & Co., Bombay, relating to the formation of a Company

for the introduction of grain elevators into India. It is unnecessary for me to dwell upon the very great importance of this matter; and I shall be glad to be furnished with the views of your Excellency's Government on Mr. Smith's proposals for State assistance to the Company, and on the subject of his letter generally. It is clearly impossible that the Government should assist the present project to the extent suggested in Mr. Smith's letter, but some aid might perhaps be given, and if your Government is disposed, as I presume it will be, to promote Mr. Smith's undertaking, I shall be ready to consider any recommendation that you may think fit to make.

2. I enclose, for Your Excellency's perusal, a copy of the Board of Trade Journal for October 1889, in which, at page 399, will be found an account of the steps taken by the Russian Government to promote the erection of elevators along the lines of railway leading to Odessa.

4.

JAMES G. SMITH, ESQ., *of Ritchie, Stewart & Co., Bombay, to the Under-Secretary of State for India, dated 17th September 1889.*

I have the honour to inform you that I desire, in connection with a few others, to form a "Grain Cleaning and Elevator Company" for India, and we beg the favour of your laying our representation before the Secretary of State in Council, who, we trust, may be pleased to afford us his support and assistance in the directions necessary.

We beg to invite a reference to the accompanying memoranda on the subject laid unofficially before you last month by Colonel Filgate, R.E., from which you will observe that our aim is to introduce into India a system of cleaning, grading, and handling wheat, based upon that universally adopted in the United States and Canada, and now being extended to other countries.

In putting the scheme before you we do not consider it necessary to recapitulate in detail the many valuable opinions recorded in favour of some such system, as we believe the Secretary of State to be fully acquainted therewith.

Objects of the scheme.

Our primary object is to clean and raise the grade of the grain received from the producer, and to prevent the subsequent adulteration of Indian wheat which now prevails. By this, among others, the following advantages should be gained :—

(1) The improvement of the reputation of India as a wheat-growing country.

(2) The extension and the improvement of the cultivation of wheat by the above, and by putting the business on a more satisfactory footing.

(3) The improvement of the position of the producer by depriving others of the opportunities of mixing, carrying, and profiting by an adulterated or dirty sample which was subsequently, at considerable expense and trouble, to be brought to a clean state before it can be used.

(4) The reduction of the expense of carrying and handling, by sea and by land.

(5) Facilitating the storage, purchase, and sale of, or the borrowing and lending of money on, the grain crops.

(6) Opening the trade to all acquainted with the markets as opposed to the present state under which it is confined to grain experts, and to those who can or will pass off an adulterated article.

The effects which may be expected are :—

Benefits to xpected.

(1) Benefit to India as a wheat-producing country in increasing the demand for, by removing the objections to, its produce.

(2) Benefit to all concerned by putting the Indian wheat trade on a firmer and more satisfactory footing.

(3) Benefit to the State and other railway owners from increased traffic due to a better demand for and extended cultivation of Indian wheat by relieving them of the custody of grain at stations, and by the more rapid loading, unloading, and release of their wagons.

(4) Benefit to the trade generally in reducing charges for handling, &c.

(5) Benefit to the Port Trusts in concentrating the traffic at the port storage elevators.

(6) Benefit to the shipping in increased traffic and the more rapid loading of vessels.

(7) Benefit to the trade by introducing more reliable samples of wheat.

(8) Benefit to the consumer in supplying a pure and graded article.

(9) Increased facilities for storing grain.

(10) Increased facilities for dealings in wheat on documents.

(11) Improvement in the position of the producer from the increased value of his product when cleaned and graded.

Concessions required.

That the proposed Company may start with reasonable prospects of success, it appears to us that the assistance of Government would be necessary in the following directions :—

(1) Arrangements for the countersignature of certificates by Government officials.

(2) The free provision of land for the Company's purposes, either within or adjacent to the railway and Port Trust premises, and connected with the lines by sidings.

(3) A guarantee that similar facilities will not be afforded to a competing Company or individual for a term of twenty-five years.

(4) That the grant of concessions as above extend to every grain-shipping port, and along every line of railway, built or to be built, through the grain-producing districts of the Indian Empire.

(5) A guarantee of interest at the rate of 4 per cent. per annum for the first five years of the Company's operations, such advances being, however, repayable, without interest, from half of surplus profits in excess of 6 per cent.

The rights for which we would ask are as follows:—

(1) To erect elevators, cleaning or other machines for the cleaning, grading, and storage of wheat at all ports and railway stations connected with the grain trade.
(2) To levy charges (which may be under the control of Government) for the cleaning, grading, loading, and storage of grain.
(3) To issue certificates for the grain under the Company's charge.
(4) To act as agents for producers and others for the disposal of their grain.
(5) To act as agents for merchants and others for the purchase of grain.
(6) To make advances of money against grain held in the Company's elevators.
(7) To advance money to the ryots on the security of their land, crops, &c.
(8) To act generally as warehousemen, forwarders, shippers, and agents in all matters connected with the grain trade.
(9) To charge for any or all of these conveniences to the trade according to usage, and subject to the control of Government.

Selection of stations.

The adoption of the scheme at starting in its entirety, even at a few stations, is, we are inclined to think, a step too advanced for immediate consideration, and we would now propose that the first operations be conducted so as to disturb as little as possible the existing arrangements. In this view, we would propose to select a few stations on some of the principal grain-carrying railways, and to conduct thereat simple cleaning and grading operations, returning the grain into bags, properly secured, and covered by certificates as to the quantity and quality, thus discarding for the present the idea of the elevator proper.

In the English markets our efforts would be directed to securing a demand for the clean and graded article, and further development of the scheme would be dependent upon the results obtained. We have reason to believe that in the English grain centres, accustomed to the American system, the certificates above referred to will speedily receive the credit they deserve, and, so soon as they become recognized in the English markets and thus act to the benefit of the producer, the steady development of the scheme may be confidently anticipated.

The railways on which it is proposed to commence are—

The Great Indian Peninsula Railway,
The Bombay, Baroda and Central India Railway,
The Bengal-Nagpur Railway,

these being contributory to the one shipping centre of Bombay, between which place and Liverpool the trade is considerable, while Liverpool is a port already accustomed to the American system of clean and graded grain.

The authorities of the above-named railways have been addressed, and, so far as at present ascertained, the scheme will be favourably received and supported by them.

The stations at which machinery is proposed to be erected will be selected in communication with the Companies.

It is probable that in all some fifteen stations at the outset will be provided with cleaning, grading, and weighing apparatus and with some elevating machinery, all of which will have to be sheltered from weather by buildings sufficiently strong to withstand the vibration of the machinery, and constructed with some regard to their future uses.

The machinery may be worked by bullock or steam power, as circumstances may require. It appears to us that the undertaking will necessitate the sending to India of a few qualified men to commence, conduct, and instruct in the operations, but we would desire to avail ourselves of the assistance of the Railway Companies' staffs to the utmost extent possible.

Probable cost.

	£
We believe that the whole of the machinery required in the first instance is readily obtainable in England, and including freight, railway charges in India, and other expenses, we estimate its cost at	7,500
The buildings at fifteen stations, with cost of fittings and erecting machinery, would probably cost . . .	10,000
The pay and allowances of staff, preparatory to the commencement of work, may be taken at	5,000
And preliminary and contingent expenses at . . .	2,500
Making a total of .	25,000

Besides keeping the capital expenditure within the narrowest limits, it would be our object to keep down the working expenses and charges as low as possible. In the more advanced stages of the undertaking the charges to be made will, beyond doubt, be far more than covered by the saving in cost of handling, &c., but during the preliminary operations just described the charges for cleaning and grading must be reduced to a minimum, to be covered by the enhanced value of the clean grain, and still leave the ryot sufficient inducement to avail himself of the advantages offered.

During this period of education and experiment, we can hardly expect the machinery to do more than pay the expenses of its working, but each subsequent step in advance should put our operations on a more satisfactory footing.

So soon as a demand for clean and graded wheat is secured in the United Kingdom, a demand on the part of producers or owners for the cleaning and grading of their wheat will certainly follow, and as this increases, so will the present scheme progress towards the erection of a complete system of elevators, and, as success becomes assured on one or more lines of railway leading to one port, so will other lines of railway and other ports be supplied with similar advantages.

Guarantee of interest.

All extensions of operations involving expenditure beyond the amount of 25,000*l.* referred to in this paper would be submitted for the sanction of the Secretary of State for India in such manner as he may direct, and we confine our present request for a guarantee of interest to a half-yearly payment, calculated at the rate of 4 per cent. per annum on the 25,000*l.* already indicated and on the subsequent sums sanctioned from

date of such sanction, for a period of five years from that of the acceptance of the proposals which we have the honour to make.

The capital of a Company sufficiently important to deal adequately with the subject of our representation must necessarily be large, but at starting the amount to be called up would be limited to 25,000*l.* and during the continuance of the guarantee, further calls must be restricted to amounts necessary to cover extensions duly sanctioned.

5.

Memorandum by COLONEL FILGATE, R. E., *on the proposed introduction into India of the American Elevator system of handling Wheat.*

The proposal to deal with Indian wheat after the manner, more or less modified, in which the wheat crop of the American continent is handled, under what is known as the Elevator System, is put forward in the belief that it will commend itself to those high authorities conversant with the present serious defects of the trade and interested in remedying them.

The promoters of this scheme believe themselves, as a body, to be cognizant with the Indian wheat trade as at present carried on, both in India and England, with the system in India of handling and adulterating the wheat, from the time of its growth until its sale in England, and with the American system, under which pure and graded wheat only is put upon the English market. They claim that their experience, supplemented by their study of the subject, both from the published views of high authorities (*e.g.*, Her Majesty's Secretary of State for India, the Government of Bombay, the Bombay Chamber of Commerce, the Association of British and Irish Millers, Sir E. W. Watkin, Mr. McDougall, and others), and from inquiries of others connected with the trade (as merchants and millers), puts them in a position to deal pratically with the subject.

How Government is interested.

Before proceeding to describe the proposed undertaking, it is desired to represent the advantages to be derived therefrom—advantages which will be shared by all except the middlemen, whose presence is considered the worst future in the trade as it now exists.

The Government in this matter may be likened to a large American Railway Company whose object it is to render most valuable, by cultivation or reputation, the lands in its ownership. It is due to this interest in the land and its produce, in America, that the Elevator System has not only come into existence, but has become universal and indispensable along the railroads of the wheat belt of the American continent, and so highly do the railways value the advantages of the system that, where the grain crop is the principal commodity, the Companies decline to carry grain which has not been passed through the elevator. The advantages here indicated are that, by means of the elevator, a perfectly pure and reliable sample is obtained directly it leaves the farmer's hands, and the reputation of the district is not risked by the producer being allowed to place upon the market grain which has not been subjected to this recognized process of cleaning and grading.

It must not be imagined that the farmer suffers from this apparent

restriction in the forwarding regulations, for, as he has found in practice, it works entirely to his advantage, as the superior cleaning machinery in the elevator raises the grade of the sample.

The advantages to the Government, as the possessor of land as interested in the principal Indian railways, may be considered under those claimed in connection with the transport of the grain. The railways concerned would be relieved of the responsibility and cost of receiving and guarding the wheat at their stations; as this would be done for them by the elevators, they would be relieved of the cost of loading and unloading their wagons, their rolling-stock would be more rapidly freed, and the fact of their carrying only the pure article would doubtless lead to their securing higher freights than when compelled to charge also for the conveyance of dirt. It should be added that when the carriage of grain in bulk is arrived at the existing closed wagons (invariably used for the purpose in America) can be loaded and emptied by means of elevators in the space of a few minutes, no change whatsoever being therefore necessary in the wagon stock of existing railways.

Port Trust and shipping.

To the various Port Trusts the proposed undertaking presents the advantage of concentrating the export grain traffic at the port storage and shipping elevators. By means of sidings the railway cars are run into these and instantaneously unloaded, while the ship to be loaded, when brought alongside, can receive its complement of grain in a few hours.

The shipping interest is secured, in the first instance, like that of all others concerned, by the improved footing on which the grain trade is to be placed, but also in the more rapid and less costly loading of the vessels and by their being enabled to carry a greater quantity of grain in bulk than in bags. For this purpose the Atlantic steamers are usually fitted with bulkheads, the addition of which is no inconvenience and of little expense, the divisions so made being capable, as a rule, of holding 1,000 quarters of grain each.

Advantage to producer.

The advantages to the producer are as follows: on delivery of his grain to the elevator it is cleaned, graded, and weighed, and a receipt therefor at once granted to him. This receipt may be held, sold, or transferred by him at his pleasure, it being negotiable in all banking transactions just as is a bill-of-lading or railway or warehouse receipt, and possessing the additional security that it represents a certified quantity of pure grain of a certain grade or grades. By this system it is further secured to the producer (or other owner of the wheat) that the proper value for his grain will be obtained, as it remains in the custody of the Elevator or Railway Company (as his agents) until placed on board ship.

Means are afforded to him of holding the grain so long as he likes until prices suit, the Elevator Company being responsible for its condition.

Grain ultimately deposited at the seaport storage elevator is, under this system, sold and resold on the American continent through the medium of the elevator receipts without delivery. The whole system as affecting the producer is one calculated to secure to him the maximum value of his product, and to encourage him to grow more and better grain year by year.

Advantage to trade.

Turning to the trade generally, it is, on the face of it, a very

unsound condition of things that a large percentage of dirt should be carried from the Indian wheat fields to the English market, but what can be said of a policy which permits, in addition to this, the existence of middlemen, who, for selfish ends, concoct mixtures which ruin the reputation of the country as one capable of producing good wheat? But this is not the only important evil done to the trade, for, under the existing circumstances, which lead to such mixtures becoming recognized samples, the business is necessarily confined to those who can or will pass off as Indian wheat upon the English markets a sample which just passes muster, and inflicts upon the miller a mixed and dirty article, tending to depress, year by year, the reputation of Indian wheat. That such men should oppose any such scheme as that suggested may of course be accepted at the start, but what is to their disadvantage in this matter reacts to the advantage of the producer, for the clean wheat, which is the basis of the trade, must necessarily suffer in price in proportion to the extent to which adulteration by middlemen is carried on.

As opposed to this, the Elevator System throws the trade open (thereby increasing competition) to all acquainted with the markets, although not necessarily grain experts, for they buy and sell on recognized certificates, which bear on the face of them the quality and quantity of the grain.

The trade also directly benefits by the saving of the charges which must necessarily be incurred in mixing and conveying dirt.

The proprietors of the proposed Elevator Company believe that, under certain favoured arrangements which will be hereafter described, they can, by small charges for cleaning, grading, and storing wheat, secure to themselves a fair return on their outlay, and that the economy of the system will lead to their charges being covered many times over by the existing cost of handling, sampling, &c.

The undertaking may be commenced upon by selecting, in concert with Government, one line of railway for its operations, and these operations may be limited at the outset to a few favourable stations, at which wheat, after cleaning, might even be returned to the bags. In this manner the risk might be reduced to a minimum, until the demand for the pure article had been ascertained. In this connection it must be borne in mind that, disregarding London for the moment, there are many important markets which demand clean wheat, and millers who protest against or refuse to take, except at low prices, the mixtures now offered to them, and so troublesome and expensive to them to clean and to separate.

If successful in finding a market for its cleaned and graded article (which success it has no reason to doubt), the Company would be prepared to extend its operations by the erection of elevators wherever deemed necessary, and to such a point as to secure that it will become a recognized institution as in America.

Government assistance and control.

The Company would be prepared to submit to the regulation of its charges by Government, and their first request would be that their cleaning and grading be so conducted to the satisfaction of Government that they would allow an officer, appointed by themselves, at each station to countersign the certificates issued by the Company, the Company undertaking to hold the Government harmless for the proper delivery

of grain of the proper description. The promoters would stipulate for this, and be prepared to bear the cost of it, as at once placing them in a position above suspicion as to the value of their certificates. Possibly, this might be effected at first by local officers in addition to their duties.

The assistance required from Government in order to secure the formation of a Company of character and strength sufficient to deal with such a problem as this must take a form which will enable the Company safely to await the gradual development of the scheme. From the producer to the miller every one has, more or less, to be educated to the benefits of the system, and the proposed Company could not risk the undertaking of this education without some security that if so far successful, they would be freed from the immediate opposition of others who had not undertaken this initial trouble and expense, but were ready to take advantage of the opening secured.

The Company would require, as already stated, the assistance of Government officers in the matter of its certificates.

It would require land for the erection of its elevators both at the ports (on Port Trust land) and in or connected with the railway premises at each station where an elevator is to be erected.

The elevators would have to be connected with the railway lines by sidings. And it would require that similar facilities should not be afforded to a competing Company or to individuals for a term of say twenty-five years. These concessions to extend to every grain-shipping port, and along every line of railway built or to be built into or through the grain-producing sections of the Indian Empire.

The Company would also require that interest at the rate of 4 per cent. per annum be guaranteed by Her Majesty's Secretary of State for India on their paid-up capital during the first five years of their operations. Such advances to be repaid, without interest, from half of surplus profits earned by the Company in excess of 6 per cent. It is believed that the concessions asked for are reasonable and legitimate.

For over ten years now it bas been recognized that the future of India, as regards its farming interests, depend upon the introduction of the Elevator System as applied to the American continent.

The grant of land by Government free to Companies calculated to work out a public benefit is not an unusual favour.

The grant of the exclusive privilege for a limited period is also similar to what has been secured to Railway Companies in the past by their contracts with Government.

The grant of a guarantee also, for so short a time as five years, is not unreasonable considering the State interests at stake.

The rights required by the Company would be much as follows :—

To erect elevators for the cleaning, grading, and storage of wheat at all ports and railway stations connected with the grain trade.

To levy charges, as authorized by Government, for the cleaning, grading, storage and loading of grain.

To issue certificates for the grain under their charge.

To act as agents for producers and others for the disposal of their grain.

To act as agents for merchants and others for the purchase of grain.

To make advances of money against grain held in the Company's elevators.

To advance money to ryots on the security of their land, crops, &c.

To act generally as warehousemen, forwarders, shippers, and agents in all matters connected with the Indian grain trade.

And to charge for any or all of these conveniences to the trade according to usage, and subject to the control of Government.

But the Company will not be permitted, under any circumstances, to act as merchants or owners of grain.

The details connected with the working of this scheme are numerous, important, and interesting, but it is probably not necessary that many of them should find a place here.

Elevators described.

An elevator may be seen at work at more than one place in England. It consists of a building of considerable height, and of varying floor space according to its capacity, the length invariably increasing with the latter. The "handling elevators" at the railway stations in America usually possess a capacity of from 30,000 to 40,000 bushels, and occupy a ground space of about 30 feet × 40 feet, and run to a height of from 60 feet to 75 feet. The "port storage elevators" run from 250,000 up to 1,000,000 bushels and over. The ground space occupied by these would be, say, 50 feet to 60 feet in width, and from 100 feet upwards in length according to capacity. The "first Russian grain elevator" recently erected was for a capacity of 275,000 bushels, and measures 63 feet × 128 feet, and is 82 feet high to the roof. It cost 214,000 roubles, which is probably 30 per cent. to 40 per cent. more than it would have cost in America.

The machinery in connection with an elevator consists of steam or other motive power, together with weighing, elevating, conveying, cleaning, separating, and fanning machinery. A good deal of information, including dimensions and prices, can be obtained about these in this country. It is believed that the "elevator" machinery generally has been brought to such perfection that, in spite of its simplicity, it performs its work with great efficiency, expedition, and economy, and is not liable to get into any serious disorder with ordinary care. In many out-of-the-way places, on the American frontier settlements, the elevators are hundreds of miles away from foundries or mechanical workshops.

Cost of working and charges.

The elevator in America is usually made of wood, but there is no reason why the building should not be of any other material. The cost of an elevator in America is usually calculated at its bushel capacity, including all appliances, and ranges from 25 cents per bushel for the smaller elevators to as little as 18 cents per bushel for the largest size of storage elevators. Elevators are frequently built on an undeveloped plan, and added to in length as their capacity requires to be increased.

The cost of working an elevator is comprised of the price of fuel, the salary of the manager, and the pay of a small number of "hands," varying from 2 to 12, according to the size of the elevator. The cost of fuel at the "handling" or up-country elevators is considerably reduced by the fact that the weed seeds (often very abundant in oil) and other refuse, extracted in process of cleaning the grain, are made use of for this purpose.

The general rules for years past at the up-country elevators, has been to charge half a cent per bushel for cleaning, grading, and weighing, and 2 cents per bushel for a minimum of one month's storage, weighing, and loading into cars. It seldom happens that grain is stored in these for so long as one month, for they are used for cleaning and passing on the grain to the port storage elevators.

At the latter, other storage charges are made for longer periods at reduced rates, a small specific charge being made, if it is necessary, during the storage of the grain, to pass it through the fanning machinery in order to secure its condition.

Experience on the American continent has shown the business to be a thoroughly safe one from the fact that the Elevator Company takes no risk in connection with the grain market, but merely acts as warehousemen and agents for farmers or grain merchants, the charges being a first claim upon the grain passing from the Company's hands. It is very necessary so to locate and construct each elevator that it shall, as nearly as possible, equal the demands at the point, but provided this is seen to, every elevator should necessarily return a fair dividend upon the cost of construction and the yearly cost of working.

If the proposed Company's operations be restricted, at the start, to up-country operations at a few stations, it is believed that a sum of 50,000*l.* would suffice, to be increased by a similar sum so soon as circumstances justify and Government permit extensions to some other stations, and to a storage elevator at the port concerned. It is hardly likely that the Company's expenditure, during the first five years of its existence, will exceed 100,000*l.*, but thereafter, presuming that the benefits of cleaning will then be thoroughly appreciated, both in England and in India, the capital expenditure will increase to a large figure

6.

Government of India, Public Works Department, to Government of India, Revenue and Agricultural Department, No. 104 R. T., dated 1st May 1890.

With reference to correspondence ending with Revenue and Agricultural Department endorsement No. 226 C., dated 31st January 1890, the undersigned is directed to forward, for information, a copy of a letter No. 477 T., dated 13th March 1890, and enclosures, from the Consulting Engineer to the Government of India for Railways, Central Division, regarding the formation of a "Grain Cleaning and Elevator Company for India."

2. A further communication on the subject is expected from the Government of Bombay and will be forwarded on receipt.

7.

Offg. Consg. Engr. to the Government of India for Railways, Central Division, to Government of India, Public Works Department, No. 477 T., dated 13th March 1890.

In reply to Public Works Department No. 0189 R. T.* of 4th February 1890, I have the honour to forward copies of a letter, No. 2166 of 8th March, from the Agent and Chief Engineer, Bengal-Nagpur Railway, enclosing copies of a letter from Major W. T. LeBreton, Retired List, a promoter of the Cleaning and Elevator Company, to the Bengal-Nagpur Railway Company, and of the reply to it, by the Board.

* R. T., March 1890, Nos. 99 to 110 A.

2. The requests for assistance made by Major LeBreton appear reasonable and such as the Bengal-Nagpur Railway might grant on its own interest.

3. The proposals of the new Company embrace two perfectly distinct things, *viz.* :—

(*a*) a system of receiving dirty or adulterated grain, cleaning, bagging, and storing it, and issuing it again under a system of certificates signed by a Government official ; and

(*b*) the introduction of the American Elevator System.

The American system.

4. To take the second first, the American elevator system is a mechanical system of loading and unloading and weighing grain in bulk by the action of gravity, and is the outcome of the peculiar conditions of the grain trade in parts of the United States of America, where manual labour is costly and where very large quantities have to be received or delivered at great centres like Chicago in the shortest time and at the smallest cost possible. A sketch of the mechanical part of the system will be found in the Proceedings of the Institute, Civil Engineers, Volume LXXVII, page 237. The system is only adapted for dealing economically with very large quantities of grain in bulk, not in bags, and where the grain is carried both by rail and by ship, in bulk and not in bags.

Indian conditions.

These conditions do not exist in India. Here manual labour is cheap. The quantities to be dealt with at any up-country railway station cannot be called very large; they are necessarily brought to the railway station in bags, not in bulk, and neither the rolling stock of Indian railways, nor, I believe, the ships frequenting Indian ports are adapted for carrying grain in bulk. However, as the Company do not propose at first to adopt the elevator system, it is unnecessary to say more here than to observe that the Government of India could not give them a monopoly to use any kind of machinery in which the Company did not possess a patent right of invention obtained in the usual way under the Patent Laws.

5. As regards the other proposal of the new Company to establish cleaning machinery at several centres, as set forth in Messrs. Ritchie, Stewarts' letter to the Under-Secretary of State for India, the advantages and beneficial effects will be disputed by no one.

6. As regards the countersignature by Government officials of certificates of the quantity and quality of the grain bagged by the Company, it is not apparent how any arrangement could be made. No Government official could be held responsible for his signature to the certificates unless he had complete means, in time, opportunities and technical knowledge, of verifying their correctness, and without such responsibility his signature would be of no value.

Inspectors and certificates.

7. To carry out the proposal, it would be necessary to appoint special experts to the depôts, who would have to reside constantly on the premises and see all the grain cleaned, bagged and weighed. They would fill a position and perform duties closely analagous to those of the Excise officers attached to breweries and distilleries in the United Kingdom. Government could not thus accredit the certificates without becoming responsible for their contents. Were the experts paid by the Company, they would not be Government officials even if they were appointed and dismissed by Government, and there appears to be no reason why the State should assume any responsibility, or incur any expense to further the objects of a private mercantile company.

8. It would probably be expedient in most cases in the interests of the railways to allow the Company the use of land and sidings at some of the principal stations, but this could not be promised to the Company free of cost, and each case should be dealt with on its merits.

9. It would not seem expedient, even if possible, to grant a monopoly to any Company of any advantage or assistance which Government could properly give. It is not clear how the State could guarantee any interest on capital to a Company over whose operations they could exercise no control, and if the great and wealthy firms now engaged in the wheat trade in India and who ostensibly clean their wheat at the railway stations do not really clean it, it is not clear why it should be expected that they would make it over to another Agency to clean for them.

10. The nine rights for which the Company ask appear to be rights already possessed by all British subjects without any control from Government.

11. I do not think the staffs of the railways could be properly employed in erecting buildings to be the property of the grain Company, and the Company should not look to the railways for other assistance than what the railway workshops could give on the usual terms of payment.

12. The proposed Company would no doubt have to contend with the most formidable opposition from all those people who at present find it more to their interest to deal in adulterated rather than in clean grain, but I think they could and should rely for success, not on Government patronage, but on their own just dealing, like any other commercial firm who propose to succeed by producing and selling a better article than their competitors, and by establishing a reputation for doing so.

8.

Agent and Chief Engineer, Bengal-Nagpur Railway, to Consulting Engineer for Railways, Central Division, No. 2166, dated 8th March 1890.

In reply to your No. 307 T., dated 17th February 1890, enclosing copy of Government of India No. 0189 R. T., dated 4th February 1890, I have the honour to forward copies of correspondence sent me by my Board with their general letter No. 66 of 1st November last.

The letters contain all I know on the subject at present, but I understand the Board to mean that they are quite prepared to give any facilities in their power that the Government of India would agree to.

9.

Major W. T. LeBreton, to Managing Director, Bengal-Nagpur Railway Company, dated 17th September 1889.

Some friends with whom I am associated in the matter have under consideration a scheme for placing the Indian grain trade upon a more satisfactory footing than at present.

We purpose ultimately to establish in India a system very similar to that known in America as the Elevator System, and we believe that one of its most important advantages will be that which will accrue to the railways carrying on the operations in the grain-producing districts.

Objects and advantages of the scheme.

You will be well aware that the existing system is detrimental to the reputation of India as a wheat producing country, and to the extended cultivation of this product, in placing upon the English market adulterated and inferior samples hampered with charges and illegitimate profit, and depressed in value to the consumer by his expenses and trouble in rendering it fit for milling purposes. These circumstances necessarily re-act upon the producer and discourage him from improving and extending his operations, the result being that the areas under cultivation show a tendency to diminish rather than to increase.

With a proper system of cleaning, grading, and storing and handling, we believe that we may calculate on results the opposite of this, and when our ulterior object is arrived at, the railways concerned should benefit in an improved traffic and reduced expenses in handling and in the provision of wagon stock.

A system of elevators properly equipped and situated would relieve the railways of much of the detail and expense of receiving and dealing with grain consignments, and would free the wagons much more expeditiously than under the present system. Even where a break of gauge or necessity for transhipment occurs, a transfer elevator will perform the necessary duty more advantageously than the employment of manual labour. The present intention of my friends is, however, to approach this end gradually, and, as a commencement, their purpose is to establish cleaning operations at a few of the principal stations on some of the most important lines of railway, returning the grain, after cleaning and grading, into its own bags, to be handled by the Railway Companies in the usual way.

In the representation to the India Office it is provided that the clean and graded grain be covered by a certificate countersigned by a Government official, and it is beyond doubt that in European grain centres accustomed to the American system such certificates will receive the credit they deserve, and so soon as they become recognised in the English market, a steady development of the scheme may be confidently anticipated.

We have every reason to believe that the scheme will receive the support of the Indian Government, and my object in now addressing you is to enquire to what extent we may hope for the valuable assistance of your Company.

We would desire to be informed if your Board would desire to see our operations extended to your line of railway, and, if so, would ask the favour of your naming two or three of the most important grain centres which you would suggest for our preliminary cleaning operations.

Assistance required from the Railway.

It is important that the cleaning should be carried on as near as possible to the existing goods-sheds and sidings, and it would be a great assistance to us if your Company would allow us to carry on the work within its own premises. The cleaning machinery proposed in the first instance would occupy but little ground space, and might be sheltered by an extension of, say, 25 feet of any existing goods-shed.

The other directions in which the assistance of your Company would be valuable may be denoted as under:—

(1) The hearty co-operation of your staff, especially at stations concerned, in affording such assistance that lay in their power.

(2) Possibly some extra care at the outset in the handling and conveyance of certificated consignments.

(3) A favourable rate for the conveyance of the necessary plant and machinery.

(4) The assistance of your engineering staff in the erection and construction of any buildings.

(5) The supply to us of any old engines, material or fuel required for our purposes.

For all such services and supplies we would of course be prepared to pay. At this moment I can but ask you kindly to lay before your Board this general sketch of our plans and wants, and should it meet with a favourable reception, a few of us will be happy to meet you for the purpose of discussing details.

10.

Managing Director, Bengal-Nagpur Railway Co., Ld., to Major W. T. LeBreton, dated 11th October 1889.

I have submitted to the Board of Directors your letter of the 17th September, relative to a scheme for placing the Indian grain trade upon a more satisfactory footing than it is on at present, by the establishment

of a system of cleaning, grading, storing and handling grain in India similar to that known in America as the Elevator System.

The Board fully recognize the probable beneficial results of a system which would effect the improvements you contemplate.

Co-operation promised.

When your friends are in a position to commence operations, the Board will be glad to place them in communication with our Agent in India, at the same time forwarding him a copy of your letter and instructing him to afford them facilities for giving your system a fair trial.

11.

Government of Madras, to the Government of India, No. 1323, dated 24th February 1890.

From the Board—Proceedings, dated 29th January 1890, No. 411 Mis.
From the Chamber of Commerce,—Letter dated 7th February 1890.

With reference to Mr. Under-Secretary Muir-Mackenzie's Circular, dated the 6th ultimo, No. 122-227 C. (Agri.), I am directed to forward copies of the papers noted in the margin, and to state that His Excellency the Governor in Council concurs in the opinion expressed by the Board of Revenue, that the proposals do not call for consideration in this Presidency, as the area of wheat cultivation is very small and is not likely to increase materially.

12.

Chamber of Commerce, Madras, to Government, Madras, dated 7th February 1890.

I have the honour to acknowledge receipt of the order of the Madras Government, dated the 21st ultimo, Mis. No. 445, forwarding to the Chamber for remarks, copy of a despatch and its enclosures, from Her Majesty's Secretary of State for India, relating to the proposed formation of a company for the introduction of grain elevators into India.

Official interference deprecated.

In reply, I am desired to say that it seems to the Chamber that, when those concerned in the wheat trade of India are satisfied that an elevator system would be beneficial, there would be sufficient enterprise in Bombay and elsewhere to introduce that system without the elaborate guarantees that are asked for by Mr. James G. Smith. The need for official interference in the matter has yet to be made out, and the Chamber especially deprecates the creation of a semi-official monopoly, but it is right to add that the scheme does not directly concern the Presidency of Madras.

13.

Proceedings of the Board of Revenue, Madras (Revenue Settlements, Land Records and Agriculture),—No. 411 Mis., dated 29th January 1890.

Scheme not required in Madras.

RESOLUTION.—With their letter communicated in the G. O. read above, the Government of India forward papers detailing a scheme for

providing grain elevators at certain stations in India in order to clean and raise the grade of the wheat at present exported. As the area of wheat grown in Madras is very small, and as it does not appear likely to increase materially, the Board is of opinion that the proposals do not call for consideration in this Presidency. Nor is there sufficient information available here to admit of their forming an opinion on the merits of the proposal generally.

14.

Government of Bombay, to Government of India, No. 7197, dated 9th October 1890.

I am directed to acknowledge the receipt of Mr. Muir-Mackenzie's Circular letter No. 122—127 C. (Agri.), dated 6th January 1890, and memorandum No. 221 C., dated 31st idem, with their accompaniments, on the subject of the formation of a Company for the introduction of grain elevators into India.

2. In reply, I am directed to forward, herewith, for the information of the Government of India, copies of the reports received from the Chambers of Commerce, Bombay and Karachi, the Director of Land Records and Agriculture, and the other officers, &c., mentioned in the margin, who were consulted by this Government on the subject, and to communicate the following observations of His Excellency the Governor in Council.

The Political Agent, Kolhapur and Southern Maratha Country.
The Political Agent, Kathiawar.
The Commissioner, Northern Division.
The Commissioner, Central Division.
The Commissioner, Southern Division.
The Commissioner in Sind.
The Public Works Department, Railway Branch.

3. It will be observed that the majority of the officers, &c., consulted are either opposed to the scheme propounded by Mr. Smith or support it in a very lukewarm manner when shorn of the onerous conditions stipulated for by that gentleman.

4. As it is not proposed, for the present at least and for some time to come, to construct elevators, the operations of the projected company would be limited to cleaning and grading wheat at some few principal trading and railway centres. For such an undertaking no State aid is needed, no monopoly should, or indeed, in the opinion of His Excellency the Governor in Council, without special legislation, could be granted, and no concessions in the form of free land and guaranteed interest on capital should be given. The matter is one purely of private enterprise: it is a mere trading venture, and has no special claim on direct Government assistance. State aid not required.

5. That the wheat grown in the corn-producing tracts of India should reach Europe clean and free from adulteration and admixture of dirt and impurities is indeed a circumstance much to be desired. His Excellency in Council, however, greatly doubts whether the scheme now propounded would secure this desideratum.

6. That Indian wheat is despatched from this country with a considerable admixture of substances which are not wheat is the result of the action of the middleman and the merchant quite as much as, if not more so than, it is the consequence of the negligence or dishonesty of the actual grower. It is clear that the grower cannot be compelled to take

want of inducement to clean wheat.

his grain to the cleaning and grading depôts of the proposed Company ; and he is not likely to do so if he finds that he has to pay for having it cleaned and graded, and that at the end of the process he has returned to him as genuine wheat a less quantity than the produce he brought to the depôt. It is also clear, in the opinion of the Governor in Council that, in the existing circumstances of the trade, the middleman and the exporter will put no pressure on the grower to induce him to have his wheat graded and cleaned. The probabilities, therefore, are that if the Company established its depôts it would find that they remained idle and unused.

Certificates: objections to.

7. The Governor in Council also considers that it is obviously most undesirable that any certificates concerning wheat which has been cleaned and graded at a station or depôt should be countersigned by Government officials. There is nothing whatever to prevent wheat so cleaned and graded from being adulterated and mixed with inferior wheat or weighted with dirt and weed seeds in Bombay or elsewhere after it left the depôt, and the certificate would then be rendered false and misleading.

8. The project now brought forward appears to the Governor in Council to be very different from such a scheme as one for the construction of a railway. It practically is a project for obtaining Government assistance in lending money to cultivators in competition with the local banker. The latter, however, at present holds the field, and would take every care to prevent the proposed Company from interfering with his business and securing his clients.

15.

Chamber of Commerce, Bombay, to Government of Bombay, dated 19th February 1890.

Opinions adverse.

I have the honour to acknowledge the receipt of your letter No. 748 of 29th ultimo, giving cover to a letter from the Government of India, Revenue and Agricultural Department, with accompanying papers relating to the formation of a Company for the introduction of grain elevators into India, respecting which you request the opinion of this Chamber.

2. The subject has received the most careful consideration of the Committee, who have also obtained, in addition, the views of other members of the Chamber largely interested in, and conversant with, the wheat trade of India, both as up-country buyers and exporters; and I am directed to say that the opinions expressed are unanimously adverse to the proposed scheme as being unsuited to the requirements of the country and impracticable financially.

American conditions different.

3. In America, where large tracts of land are under cultivation with the same description of wheat, which can be graded according to the quality of the season, as No. 1 or No. 2, elevators situated at suitable centres of rail and water communication afford to growers, dealers, and speculators a safe, cheap, and convenient means of marketing and storing their produce, which is practically a necessity in an uncertain and rigorous climate. Similar requirements and conditions, however, do not exist in this country. The descriptions and qualities of wheat produced are far too numerous and varied to admit of the system of classification and grading prevailing in America, while the absence of transit facilities

prevents the trade concentrating at interval centres in sufficient volume to afford employment for elevators. No doubt, this latter difficulty will be materially lessened as railway communication is extended and improved; but the climatic objections to the use of elevators are permanent and apparently insuperable. For seven or eight months of the year grain can be safely kept in the open air without expense for either rent, fire insurance or other charges incidental to warehousing; while, during the other four or five months, the native system of storage in pits is not only inexpensive, but gives immunity from weevils which no mode of warehousing ensures. The loss in weight from this cause alone, during the monsoon, would probably not be less than 5 per cent., not to speak of the still more serious damage to quality which results, and for this reason alone, if no other objection existed, the members of the Chamber consider that elevators would prove unsuitable and impracticable. The low cost of manual labour in India, moreover, is an important factor in estimating the working prospects of such a scheme; and except in the mere process of cleaning, where possibly mechanical appliances would be an advantage, little, if any, economy could be obtained in handling wheat by means of elevators.

4. To the cleaning and improving the quality of Indian wheat, this Chamber has always attached the utmost importance; and any means of a practical character likely to attain or further that end would be welcomed by those interested in the trade in Bombay. It is not apparent, however, how the introduction of another intermediary between the grower and the exporter is likely to give any beneficial results. This Chamber has always contended, and still maintains, that given proper conditions of sale in the consuming markets, no difficulty exists in obtaining sufficiently clean wheat at present; but if that were not so, it is evident that the measures to obtain greater cleanliness and freedom from impurities must be taken at the time of threshing, as adulteration or dirt once introduced is beyond a certain point irremediable.

Clean wheat should and can come from threshing floors.

16.

Karachi Chamber of Commerce, to Government of Bombay, dated 28th February 1890.

I have the honour to acknowledge receipt of your Revenue Department letter No. 748, dated 29th ultimo, forwarding copy of a letter from the Government of India, No. 122 Agriculture, dated 6th January 1890, with accompaniments, on the subject of the "introduction of grain elevators into India," and asking the views of this Chamber on same.

In reply, I am directed to say that, in the opinion of this Chamber, while they consider the scheme is a desirable one, the guarantees required seem to them to be unduly advantageous to the Company, and they think that when the time for its execution arrives it will probably be feasible on more favourable terms to Government.

17.

Political Agent, Kolhapur and Southern Maratha Country, to Government of Bombay, No. 141, dated 2nd April 1890.

With reference to Government Resolutions Nos. 747 and 1269, dated, respectively, the 29th January and 18th February last, Revenue

Scheme unsuitable.

Department, I have the honour to state that, although the scheme of introducing grain elevators into India is doubtless an excellent one, where wheat is grown in large quantities, it is, in my opinion, unsuitable to the present condition of the Kolhapur and Southern Maratha Country States. In none of these States is wheat cultivated in large quantities, and the grain elevators would find little, if any, work.

18.

Political Agent, Kathiawar, to Government of Bombay, No. 367, dated 10th April 1890.

With reference to Government Resolution No. 747 of 29th January last (Revenue Department), and accompaniments, I have the honour to forward copy of a note by Mr. A. Whittle, an expert, resident in Kathiawar.

Kathiawar not a great wheat-producer.

2. Kathiawar is not one of the great wheat-fields of India, though the production for export is believed to be increasing. Most of the grain goes by country boat to Bombay—a fact which would somewhat complicate the introduction of the proposed elevator system.

The chief practical difficulty.

3. The chief practical difficulty at the outset would be the local *bunya*, who almost always has a lien on the crop, and who would recognise the new system as fatal to his position and oppose it accordingly. Over the greater part of Kathiawar he is the master of the ryot, and would most probably be strong enough to upset the scheme.

4. It can scarcely be expected that the States owning the Kathiawar Railways will share in the initiative of the scheme; but if it succeeds on the great British lines of rail, it is probable that a progressive State like Bhavnagar might take it up, and grant land for buildings, though it could perhaps scarcely be asked to guarantee interest on the capital invested.

5. The limited quantity of wheat grown in the province for the European market, and the general helplessness of the cultivators make the subject of less importance in Kathiawar than elsewhere.

Grain-cleaning and Elevator Companies, Limited.

A company with the objects proposed above has become a necessity to enable the Indian grain trade to compete with America, Russia, and other grain-producing countries.

The long leads and frequent handling, as well as the bagging of all Indian wheat, seriously impede the trade; and the obstructions can only be removed by proposals somewhat similar to those set forth in Mr. Smith and Colonel Filgate's memoranda.

The system of conveying in bulk and ready handling in all shifts from the district market to the ship's hold, I estimate, would effect a saving of at least 18 per cent. on the net cost value of all wheat and grain.

The difficulties in face of the Company would be the middleman and the rolling-stock of the main lines of railways, which are utterly unsuited to carry grain or seed in bulk.

Elevators could not profitably be applied in Kathiawar save at the proposed sea terminals of the Bhavnagar-Gondal, and Ahmedabad-Dholera Railways, simply because Kathiawar is neither a seed nor a wheat-producing country.

19.

Acting Commissioner, Southern Division, to Government of Bombay, No. 1268, dated 20th April 1890.

Referring to Government Resolutions Nos. 747 and 1269, dated respectively, 29th January and 18th February last, I have the honour to submit that the officers consulted in this Division, while unanimously of opinion that, were it possible to induce the people to use grain elevators, it would be an undoubted improvement to the trade of the country, are opposed to granting such exclusive concessions as are asked for by the Company, and deprecate any Government interference with the course of trade.

2. Mr. Fleet, Collector of Bijapur (the district with a very large wheat-growing area) would limit any monopoly, if any be given, to ten years. Mr. Muir makes the sensible suggestions that the Railway Companies being chiefly interested, any concession should be made to them, and that if any such system as that proposed be introduced, Government should leave it to them to work it, giving them every facility and guaranteeing interest on the additional capital. Such native officers as have been consulted are opposed to the whole scheme, as being in advance of the intelligence and wishes of the people.

3. My own opinion can be of little value. I think it would be a mistake to give any Company a monopoly which might practically place the whole wheat trade of the country in its hands; but should it be thought necessary to do so, Government should reserve to itself the option of buying the Company's plant and business at the end of a limited number of years. I agree with Mr. Muir that the Railway Companies should be the corporations with whom the proposed Company should deal rather than with Government, and that any land required and subsidiary work in the way of sidings, &c., in connection with their lines, should be acquired or executed through their agency.

Government interference deprecated.

4. I am averse to Government servants being mixed up directly in the management of any business, and it would be better that Railway, and not Government officials should countersign or guarantee any certificates.

5. I observe it is not proposed at present to erect any elevators on the Southern Maratha Railway, so that local opinion has really little bearing on the question.

20.

Commissioner, Northern Division, to Government of Bombay, No. 1246, dated 22nd April 1890.

With reference to Government Resolution No. 747, dated 29th

Ahmedabad, No. 478, dated 24th February 1890.
Kaira, No. 1479, dated 19th March 1890.
Panch Mahals, No. 681, dated 24th March 1890, with Mr. Maconochie's No. 161, dated 24th February 1890.
Broach, No. 543R., dated 10th March 1890.

January last, on the subject of the introduction of grain elevators, I have the honour to forward the reports, as per margin, of the Collectors of Ahmedabad, Kaira, Panch Mahals (including Mr. Maconochie's) and Broach, and for my own views to refer to my report as Collector of Ahmedabad. Beyond assisting the first Elevator Companies to a grant of land as they do to railways, I think Government should not interfere.

21.

Collector of Ahmedabad, to Commissioner of the Northern Division, No. 478, dated 24th February 1890.

Scheme valuable,

In reply to your No. 482, dated 18th instant, I have the honour to state that I believe the establishment of grain elevators would be very valuable and materially assist the wheat trade of India.

2. But it seems to me that Government should not be called upon to assist in establishing them either by money or by the service of their officers. Government, at the instance of the Export Cotton Firms, Bombay, some years ago, did irreparable injury to the ryot by abolishing the Cotton Frauds Act, which prevented good cotton being adulterated with bad, and the repeal of which at this moment is deplored by many of the soundest merchants. The same Government could not consistently lend their officers' services to countersign grain certificates. Why should the quality of grain be certified to any more than cotton? The exports of wheat from Bombay only are 6 crores as against 12 crores the value of the cotton.

but not the business of Government.

3. The construction of grain elevators, again, seems to me no more the duty of Government than of spinning mills. Government might, perhaps, as an encouragement, give the first Company a grant of land, if they need it, as they do to railways. But even that seems superfluous. If the management of the Port Trust, or the East India or the Great Indian Peninsula Railways or the private enterprise of European merchants are not equal to constructing and managing grain elevators without assistance from the State, the matter might as well be left alone. In former days, before the extension of railways, Government started gins in Dharwar, and they have aided in starting the tea industry. But these precedents do not apply to the construction of mere magazines for the storage of produce. I should have thought that European mercantile enterprise could and would provide for such a thing without coming to the State for assistance. As, however, it pays apparently the great grain-exporting firms deliberately to adulterate their wheat, I can only assume that they prefer not to use elevators, just as cotton exporters prefer adulterated cotton to cotton kept pure by the interference of the State. If that is the case, why should Government assist in constructing buildings where purification and not adulteration is the object? I note that only £25,000 is needed to commence with. Surely a syndicate could provide such a flea-bite as this.

4. In conclusion, I am quite of opinion that grain elevators are needed and would be most useful, but at this time of day private enterprise should supply them. I admit that our paternal Government ought in some respects to help trade. It ought, in the interests of the cultivators and the owner of the land (the State) to prevent adulteration or mixing, either of wheat or cotton, and enable a pure article to be obtained. But it has no more to do with the classification or the storage of wheat than with that of piece goods; at least that is my humble opinion.

22.

Collector of Kaira, to Commissioner, Northern Division, No. 1479, dated 19th March 1890.

With reference to your No. 482, dated the 18th ultimo, forwarding, for opinion, Government Resolution No. 747 of the 29th January last, Revenue Department, on the subject of introduction of grain elevators into India, I have the honour to report that there is no sufficient production of wheat in this neighbourhood to justify the establishment of a wheat elevator anywhere in Kaira Collectorate, otherwise than as an experiment on its own merits. I do not think it will pay, and I deprecate any encouragement being given to it other than perhaps free use of a site for a short term of years.

Elevator not required at Kaira.

23.

Collector, Panch Mahals, to Commissioner, Northern Division, No. 681, dated 24th March 1890.

With reference to your endorsements Nos. 482 and 808, dated, respectively, the 18th ultimo and 15th instant, forwarding for opinion correspondence regarding the introduction of grain elevators into India, I have the honour to forward the accompanying letters containing the views of my Assistant and District Deputy.

2. In such matters one chief object of the State as landlord is to secure that the best and most carefully grown produce gets its full special price. And though I cannot admit that the history either of the cotton or wheat trade shows that European merchants have been in any way less unscrupulous adulterators than native merchants, I think that the balance of the effect of introducing the proposed system of cleaning and grading may help the more skilful and scrupulous wheat-grower, and perhaps benefit the wheat trade of India as a whole.

3. At the same time I incline to agree with Mr. Pranlal that the proposed change, if suddenly introduced on any considerable scale, would cause serious loss and distress to large classes of local traders. If Government see fit to encourage the Company's proposals by granting certain of the concessions asked for, I trust care will be taken that, in the first instance, the proposed system is introduced into only a few of the largest centres of the wheat trade. To establish elevators in outlying places would dislocate the present system of trade, and, so far as

Disturbance of trade.

I can judge, cause greater local loss than gain. I think also that, as has happened to a great extent with cotton presses, elevators in outlying places are not likely to be able to bear the heavy charges for machinery and for European management. As regards the Company's proposal to make advances to cultivators, I would deprecate the grant of any concession that would place the Company in a specially favourable position as a creditor. Any interference with the present system of money-lending, specially when such interference has the object of aiding a Company of English merchants at the expense of local traders and money-lenders, seems to me an injustice which Government cannot too jealously guard against. In its present condition, and, so far as I can judge, for several years to come, I think that the introduction of an elevator into any part of the Panch Mahals is likely to cause more evil than good.

24.

Assistant Collector, Panch Mahals, to Collector, Panch Mahals, No. 161, dated 24th February 1890.

Scheme supported.

In reply to your reference No. 423 of 21st instant, I have the honour to say that I should regard the establishment of such a Company as one of the greatest benefits which could be conferred upon India. Hampered and injured as it is by the present absurd system of deliberate adulteration, the wheat trade of this country has in a few years attained such enormous dimensions that its exports already exceed those of Russia, and dispute, not unsuccessfully, the hitherto uncontested supremacy of America. Under a system which will ensure the delivery of perfectly clean wheat at a minimum of cost and trouble to all concerned, the trade must advance by leaps and bounds, and at no distant day place India in the proud position of the chief wheat-exporting country in the world. It is a notorious fact that the virgin soils of America are rapidly becoming exhausted. Tens of thousands of acres in the Western States, which a few years ago bore heavy annual crops of wheat, are now devoted to inferior kinds of cultivation—it does not pay to grow wheat on them any longer. Now then is the time by freeing the Indian wheat trade from all disadvantageous conditions to enable it to strike a deadly blow at the already tottering predominance of the wheat trade of America.

Undesirable concessions.

2. Government no doubt will do all in reason that it can to assist such an immensely important undertaking. At the same time it will probably consider that it is not advisable to grant all the privileges asked for by Mr. Smith. The assistance of the local officers of Government in the matter of the Company's certificates, for instance, is unnecessary and unadvisable. In the first place, the local officers have more to do already than they can well get through; in the second, Government superintendence would have absolutely no effect in inducing the ryot and the trader to take advantage of the Company's system. Both the ryot and the trader think, very naturally, that they know better than Government what is good for them, and I am certain that a Government certificate would be practically inoperative. As soon as

these classes realise the advantages of better prices and less trouble afforded them by the Company, they will hasten to avail themselves of them without any Government interference, and may safely be left to do so. The free grant of land at ports and railway stations and the monopoly of twenty-five years are, in view of the vast importance of the scheme and its initial difficulties, reasonable. There remains the guarantee of interest for five years. About this some doubt may be felt. Yet, if absolutely necessary for the floating of the Company, this, too, should be conceded. As is very justly remarked by Mr. Smith, it is not only the Company, but also the State, which is interested in the success of the scheme; five years is not a long time; 4 per cent. is not a high rate of interest; while there is good prospect of the profits being eventually so largely in excess of 6 per cent. that the Company will easily be able to repay any money Government may have advanced, which can in no case exceed £20,000. Is the prospect worth the outlay? I feel sure that it is, and that Government will never have occasion to regret having generously aided the inception of an undertaking so important to the welfare of the people of this country.

25.

Collector of Broach, to Commissioner, Northern Division, No. 543R., dated 10th March 1890.

I have, in reply to your No. 482 of the 18th ultimo, the honour to inform you that I have had those interested in the wheat trade in Broach consulted, and the opinion seems to be that, though the introduction of grain elevators would eventually be profitable to the country, the cultivators and the men who deal in wheat in this district would not take advantage of them; that the dealings are not extensive, and that they would not subject themselves to the extra risks and detention in taking the wheat to stations where there were grain elevators and obtain the requisite certificates; that it would be well, in the first instance, to try the experiment in Bombay.

2. My opinion differs, and I think that if one or two dealers began to use the elevators, all would before long be practically compelled to use them, and if a monopoly for a long term is to be given, strict precautions would have to be taken to prevent exorbitant charges being possible or a serious damage might be done to the growing wheat trade of the whole country.

26.

Memo. by Acting Commissioner in Sind, No. 1486, dated the 7th May 1890.

Government intervention not wanted.

With reference to Government Resolution No. 747 of the 29th January, on the subject of certain proposals for the establishment of a State-aided Grain Elevator Company, the Acting Commissioner in Sind has the honour to observe that, in his opinion, no sufficient reasons at present exist for the intervention of Government in a matter which belongs properly to the domain of ordinary trade enterprise.

2. The dirty condition in which the bulk of the wheat exported from India, and especially from Karachi, is at present shipped, is no doubt a matter for regret, and the influence of speculators who have an interest in maintaining conditions of trade which make it unprofitable to ship wheat cleaner than the season's average has for some time delayed the application of a remedy.

Question of clean wheat may be left to the trade.

3. It is the interest of the exporters, however, to develop the trade, and of the consumers, on whom its development ultimately depends, to get clean wheat suited to their needs, and these two interests working together may safely be trusted in due course to bear down opposition and find a way out of the difficulty for themselves. Indications are not wanting that an earlier and more natural solution will be found than the establishment by Government aid of a Company which aims at forcing an enormous existing trade into new channels. From the correspondence printed as Appendix HH to the Report of the Bombay Chamber of Commerce for 1889, it appears that the opposition to a substantial reform in the standard which forms the basis of shipping and delivering contracts is now practically limited to the London Corn Trade Association. All other bodies concerned, notably the Liverpool Corn Trade Association, which deals with two-thirds of the imports of Indian wheat, are in favour of a fixed refraction of 2 per cent. as a maximum of impurity to be accepted without allowance. The London Association has itself come round to the view that a fixed standard should be substituted for the average of the season, and the only question now is the percentage to be fixed as the standard, which was still under discussion between the Bombay Chamber of Commerce and the London Corn Trade Association when the report was issued. Apart from this, successful attempts have been made during the past year in Karachi to establish direct relations between the shippers and the millers. Several large consignments of clean wheat have been shipped and sold direct or through factors acting for the millers *on sample*, and this system of business seems likely to extend and prove the best possible solution of the difficulty.

4. The elevator system is admirably adapted to the needs of countries where, as in America, it can keep pace with railway development and the colonisation of new tracts, the produce of which would be unable without it to find a market. Whether it is equally well suited to the conditions generally obtaining in India, is not quite so clear. The Collector of Hyderabad, however, whose long experience of Sind and its people entitles his opinion to some weight, thinks that "the establishment of elevators would, in a very short time, be thoroughly appreciated, and the whole of the wheat produced be brought to the elevators to be cleaned, stored, and despatched, and that it would be worth while for a Company to start business in Sind and the Punjab alone with more moderate assistance than Ritchie, Stewart & Co. ask for, for all India." He adds that "it would be essential that merchants should at first have agents at the stations where the elevators are established to purchase the grain, as a system of certificates would not be understood for a little while"

5. These remarks appear to the Commissioner practically to contain the key to the situation. The merchants at present buy direct from the cultivators and arrange as suits themselves for cleaning, sorting and

despatching what they buy. If elevators were established, the cultivators would probably soon find it to their interest to interpose the Elevator Company between themselves and the merchants, whose functions would thereby be reduced to buying and shipping such wheat, ready clean and graded, as the cultivators might not choose to ship on their own account through the agency of the Elevator Company. It might suit the merchants to accept this system of doing business, and the success of any Elevator Company which had their support and good will would be reasonably certain, without any assistance at all from Government. Without that support and goodwill, however, its success would be long deferred, if it succeeded at all, and would involve a struggle which it would hardly be fair to determine by the weight of Government influence.

6. When the trade is ripe for them, persons will no doubt come forward to establish elevators wherever there is a prospect of their success, and it may then be politic to encourage their establishment by the grant of free sites and such general countenance as is given to other private attempts to introduce improved methods to the notice of the public concerned in them. But, in the opinion of the Commissioner, it would be very undesirable for Government, at the present stage of the question, to enter into engagements which would certainly hamper the free development of the system when need for it really arises, should that day ever come.

27.

Director, Department of Land Records and Agriculture, Bombay, to Government of Bombay, No. 755, dated 12th May 1890.

With reference to Government Resolutions noted in the margin on the subject of the introduction of grain elevators into India, I have the honour to submit the accompanying memorandum and copy of an interesting letter received from Mr. E. R. Calthrop.

1. Government Resolution No. 747, dated 29th January 1890.
2. Government Resolution No. 1269, dated 18th February 1890.

Memo. by E. C. OZANNE, Esq., Director, Land Records and Agriculture, Bombay, dated the 12th May 1890.

Scheme deserves encouragement.

I fully appreciate any attempt to improve the wheat trade and to assist the cultivator to obtain the price which he deserves for his produce. I think, too, that it is the duty of Government to give ready assistance to any person whose object is to remove the obstacles which prevent the producer from securing the shipment of his grain in as clean a state as that in which he sells it, and to help the producer to obtain a cleaner sample than that which his rude methods of threshing and winnowing enable him to show. It is gratifying to find that the producer is no longer charged falsely with wilfully sowing mixed seed or with mixing dirt to increase the bulk of his outturn, but that it is recognised that the middleman and the merchant and the home buyers are responsible for nearly all the impurities in Indian wheat.

Experience of steam thresher Experiments.

It cannot be forgotten that a few years ago an enterprising firm sought to obtain all the desired benefits and improvements by introducing steam wheat-threshers. That firm did not ask for any concessions or guaranteed interest or for a monopoly; and yet it proved that its method of improving the wheat trade was suited to the conditions of the country, and indeed, it must be admitted, that it not only showed how a pure sample can be secured, but further how the cost of production can be diminished by eliminating the existing expensive manner of preparing the crop for the market. I need not detail the results of the steam-thresher trials carried out at their own cost by Messrs. Marshall and Sons of Gainsborough, for they were fully reported and are on record. I refer to that trial more to show that the reasons why steam-threshers did not succeed are just the reasons why grain elevators will not easily succeed, *viz.*, the absence as yet of a real demand for pure wheat, the greater profit to others than the cultivator as long as the manipulation of the comparatively pure sample sold by the producer can be secured, and the total inability of the cultivator to get a higher price for fairly clean than for very dirty wheat.

2. I am saved from the necessity of giving a detailed opinion on the question by the enclosed letter from Mr. Calthrop. That gentleman took an intense interest in the steam wheat-thresher trials, and saw personally the difficulties with which any improvement of the kind has to contend. He has for years studied the wheat trade and the means for improving it. His experience makes his opinion valuable. His views are in accord with my own, and I agree in detail with the comments he has made on the various concessions asked for by the Grain Elevator Company, *viz.* :—

Extent of Government assistance.

(1) that to give confidence to the people the certificates should be countersigned by Government officers for a limited time;

(2) that Government should provide the land required for the operations of the Company, even if such land has to be acquired under the Land Acquisition Act;

(3) that the guarantee to the Company that similar concessions should not be given to any other Company should certainly not be for so long a period as twenty-five years, but that the guarantee, as far as Government is concerned, may be allowed for, say, five years;

(4) that no guarantee of interest on the capital outlay should for a moment be granted.

Scheme to be tried first at shipping ports.

3. The elevator system, in my opinion, ought to be tried first at the shipping ports and nowhere else till it has secured success there. It is true that the alleged advantage of reduced freights by rail by the elimination of dirt before loading would be diminished; but I am sure that this diminution would practically be inappreciable. If the middlemen know that at the port the dirt will be taken out, the temptation to add to the impurities will no longer exist. This is a point for the consideration of the Grain Elevator Company.

28.

From E. R. CALTHROP, Esq., *Agent, Indian Light Railways, Limited (London), &c., &c., to Director, Land Records and Agriculture, Bombay, dated the 7th April 1890.*

I have the honour to reply to your letter No. 215 of 6th February 1890, enclosing, with accompaniments, Government Resolution No. 747, dated 29th January 1890, R. D., requesting my opinion relative to the introduction of grain elevators into India, and also to your subsequent communication No. 297 of 20th February 1890, forwarding copy of Government Resolution No. 1269 of 18th February, and accompaniments. I must apologise for the lateness of my reply, but extreme pressure of business prevented me from dealing with this matter earlier.

With reference to Mr. Smith's letter, dated 17th September 1889, I am completely in accord with the views expressed by Mr. Smith as regards the advantages (numbered 1 to 6 inclusive) claimed for the system of cleaning and storing grain in grain elevators, and also as regards the effects (numbered 1 to 11 inclusive), which may be expected after the introduction of the system into India.

With reference to the proposals (numbered 1 to 5 inclusive) as to the nature of the assistance which Government should bestow on the proposed Company, I beg to offer the following remarks :—

(1) Arrangements for the countersignature of certificates by Government officials

Government certificates.

This seems to me to be a reasonable request, and the assent of Government would confer the advantage to the public of local inspection by Government officers, and the consequent additional security of the maintenance, locally, of grades to certificated standards ; while, at the same time, it would be of assistance to the proposed Company in overcoming the prejudice and distrust with which its operations at the commencement of its business are certain to be regarded by the uninitiated. Government inspection and the countersignature of certificates would be necessary only for a limited period, as full confidence in the Company would be established as soon as the character and scope of its business came to be generally understood.

(2) The free provision of land for the Company's purposes either within or adjacent to the Railway and Port Trust premises, and connected with the lines by sidings.

Provision of land.

I would advocate all possible assistance being given in this direction. Unoccupied land should be given free of cost. Where that is not available, occupied Government land or private property should be acquired and made over under the terms of the Land Acquisition Act. As regards land belonging to State and Guaranteed Railway Companies, the land might be leased at a pepper-corn rent, provision being made for reoccupation in the event of its being unavoidable for the extension of sidings, station buildings, &c., &c., the cost of removal being borne by the proposed Company.

(3) A guarantee that similar facilities will not be accorded to a competing Company or individual for a term of twenty-five years.

Monopoly.

From the point of view of public advantage, the grant of guarantee that this Company should be free from any form of competition for a term of twenty-five years would be most undesirable. In my opinion, if a monopoly of the whole country for such a long period were to be conferred on an individual Company, it would be little short of a calamity to the trade. The modification of the practice and customs of trade, in response to external and internal pressure, is at the present moment so much more rapid than it was even five years ago, that, taking into consideration with the fact that capital for investment in industrial enterprises is also much more readily forthcoming, both from England and in India, it is rendered a certainty to my mind that such terms, if granted now, would appear in another five years to be altogether unreasonable. Every indication tends to support the view that, before the close of the century, opportunities for the remunerative investment of capital in India will be as eagerly sought for as they are now unreasonably disregarded. Year by year the accumulating wealth of England is compelled to go further afield for remunerative investment, and India cannot expect to escape for long the scrutiny that her undeveloped resources are courting.

It may be reasonably expected that in a short time the system of grain elevators, gaining ground as it is everywhere and becoming daily more indispensable, would be brought forward as regards India on terms which, as they would admit of free competition, must be much more favourable to the trade than the proposals under discussion.

The conferring upon this Company a guarantee of the monopoly of the whole country will have much the same effect as the granting of such a guarantee to a Railway Company for the same period would have on the construction of railways in a country where railways did not previously exist. It would result in an undesirable restriction of operations. If the Company, from lack of capital or through being guided by too cautious a policy of extension, did not act up to the legitimate needs of development, the result would be that certain localities possessing no elevators would be placed at a disadvantage to those so provided, nor when the system became almost indispensable, would it be in their power to secure the advantages of the system to themselves by local enterprise, if the Directors deemed it undesirable to extend their business, since, under the terms of a monopoly, none but the Company could provide the elevators and carry on the business.

I would not at all desire, however, that no protection whatever should be given to the promoters of the undertaking. All new enterprises of public welfare in India are deserving of, and most need, assistance to secure a foot-hold; but I consider that a period of five years, certain, with leave to apply for an extension for a further period of five years, should Government then deem it advisable, in the interest of the trade and the public to entertain such an application, would be reasonable and sufficient to give the Company a start, which would enable it to maintain a predominating position over all succeeding competitors, provided that in the meantime its business were to be conducted with ordinary energy and acumen.

(4) That the grant of concessions as above extend to every grain-shipping port and along every line of railway, built or to

be built, through the grain-producing districts of the Indian Empire.

It would be reasonable to grant this concession for a term of five years, with liberty to apply for an extension over a further period of five years, due cause being shown ; but no Railway or Port Trust should be permitted to make any agreement for any longer term, for the exclusive right to construct elevators on its premises. with this Company.

(5) A guarantee of interest at the rate of 4 per cent. per annum for the first five years of the Company's operations, such advances being, however, repayable without interest from half of surplus profits in excess of 6 per cent. Interest guarantee.

A guarantee in India of interest on capital almost invariably results in a diminution of activity, and I am, therefore, opposed to it in this case on principle ; any assistance given to the Company should take, therefore, another form. Coming from a Company which proposes to maintain a grasp of the entire wheat trade from Bombay to Calcutta and from Peshawar to Tuticorin, this application for a guarantee of interest appears to me to betray a singularly slender confidence in its ability to deal successfully even with the picked portions of it ; and if the promoters lack the courage to cast such a morsel as £25,000 upon the waters, in view of the great advantages a monopoly of this extensive character would confer upon the Company, it does not bode very well for their enterprise or ability to provide the enormous capital which would be necessary to keep pace with the legitimate demands for the full development of the system throughout the entire country.

At the present moment the conditions of the grain trade are changing. One firm at least is engaged in the shipment of perfectly pure graded wheat to Liverpool, and care should be taken in granting any concessions to this Company ; those who are already engaged in a portion of the same business should not be dispossessed of the advantages they have earned by their enterprise and foresight in breaking through, at their own risk, the trade restrictions which have acted so unfavourably on the power and the trade in general.

As regards the grant of rights to the Company, those asked for are the terms usual to the business and are in accordance with the requirements of the trade in India.

In conclusion I may state that it would give me great satisfaction on public grounds to see this Company brought into existence and at work, provided that the terms of their contract were in accordance with the views expressed in this letter. I have confidence that the Company would be a success commercially, and that, under an enterprising management and with adequate capital, it would obtain a predominance in five years that would render competition by any separate agency impossible, except under the circumstances of subsequent mismanagement, gross inefficiency, or continued inability to meet the reasonable requirements of the trade.

29.

From Commissioner, Central Division, to Government of Bombay, No. 2411R., dated 31st May 1890.

With reference to Government Resolution No. 747, dated 29th

January last, I have consulted the Collectors in this Division. Those of Poona, Nasik, Khandeish, and Ahmednagar are all of opinion that the concessions asked from Government, or some of them, could not be made, and right No. 7 of those asked for is also objected to in more than one quarter.

Concessions should be reduced.

2. I think it sufficient to append a copy of Mr. Loch's letter, as I concur, generally, in his views. So far, however, as my own knowledge goes and with reference to his last paragraph, I should very much doubt the expediency of guaranteeing any interest. The question is, no doubt, one to be considered by the Government of India with reference to large wheat-growing tracts such as do not exist in our Presidency. It is probably in such tracts that this business pays, but Western India has no such feature in common with the United States and Canada, nor is it likely to have, even under such encouragement as might result from increased demand for Indian wheat.

3. The inexpediency of making concessions (1), (2) and (3) is sufficiently shown by Mr. Loch. As to right (7), the Company would possess it in common with all capitals; but if successful in that branch of business, they would undoubtedly become dealers in grain, whether that be a primary object with them or not.

30.

From Collector of Khandeish, to Commissioner, Central Division, No. 1267, dated 22nd February 1890.

Concessions demanded excessive.

With reference to your memorandum No. 551 R. of the 5th instant, forwarding papers regarding the establishment of a Grain Elevator Company, I have the honour to state that, though the operations of the Company will no doubt be eventually very useful, and though it will, in all probability, be at first difficult to make the venture a paying one, still the demands for assistance from Government appear to me to be excessive. If the Company were to confine itself to what I may call its proper functions of cleaning, grading, and giving certificates for wheat, there would not be much harm in a connection between it and Government; but from the list of rights for which the promoters ask it is clear that the operations of the Company will be much more extensive; that it aims at supplanting the existing middlemen, and though Colonel Filgate, in his memorandum, says that it is not to act as a merchant or owner of grain, still, if it is not to make advances to ryots on the security of their land and crops, it will inevitably have to deal in grain. It must also come in contact with the present small traders, and the question arises whether it is desirable for Government actively to support a body which has these aims. I think that it is not desirable for Government to support a trading and money-lending society against other classes of its own subjects.

Certificates

2. I will now deal with the different points on which assistance is asked, and first, with the request that Government officials should countersign the Company's certificates. The officials in this Presidency would no doubt be the long-suffering mamledars, and they would have to countersign in the dark; they would have to take the assertions of

the certificate to be true, for they could not possibly check them, and in this case their signatures would be a fraud on the public; for the public would believe that the signatures meant that Government officers had themselves ascertained that the certificates were correct, whereas they have done nothing of the sort. If special Inspectors were appointed the case might be different, but I presume that Government do not contemplate the establishment of a new class of officials for the benefit of the Elevator Company.

Provision of sites.

3. As regards the provision of land for the elevators, Government would have to buy it at a considerable cost in most cases, and I cannot see why the Company should expect to have the public money spent for them. There is very little unoccupied land near the larger railway stations, and the occupied land is very valuable. The holders of it might not be willing to part with it, and it would not be possible to take it up under the Land Acquisition Act.

Monopoly.

4. Clauses 3 and 4 of the suggestions for assistance refer to a monopoly to be granted to the Company for twenty-five years, for this is what their object is. It appears to me that if the benefits to be derived from the elevator system are so great, this assistance ought not to be required, and that competition would be for the benefit of the country.

Interest.

The last request is for assistance in the way of a guarantee of interest. I think that some such guarantee might be made to a Company which, as I remarked above, confined itself to the elevator business alone; but the propriety of giving such a guarantee to a Company, which is also to be a money-lending Company, appears to me doubtful.

31.

Memo. by Acting Secretary to the Government of Bombay, Public Works Department, No. 1690, dated 16th July 1890.

With reference to Resolutions Nos. 747 and 1269, Revenue Department, of 29th January and 18th February, respectively, the undersigned has the honour to remark that the question of the formation of a "Grain cleaning and Elevator Company" for India, and the amount of encouragement and concessions the Indian Government might give to it, may, as far as this Department is concerned, be considered under the following heads:—

(1) The benefit to the Railway Companies and the State consequent on its introduction.

(2) The concessions and assistance the Railway Companies may fairly be expected to make or can make.

(3) The encouragement and concessions the Government may reasonably be asked to give in the provision of land within or adjacent to railway station premises.

It must be noticed that the ultimate aim of the Company is a grand one, involving large capital expenditure, but that a very modest commencement is proposed, *viz.*, to conduct at a few selected railway stations simple cleaning and grading operations, returning the grain into bags, thus discarding for the present the idea of the elevator.

The opinions of the Agents of the railways under this Government on the first two points, and the question generally, were invited; their replies, together with a letter from the Secretary of the Bombay Port Trust, have been printed and accompany this memorandum.

Scheme desirable.

The Railway Agents generally agree in the desirability of any measures tending to improve the quality of Indian wheats, and express willingness to give all reasonable facilities to the projected Company; but when the practical side of the question is taken up, the Agent of the Great Indian Peninsula Railway states his reasons for thinking it impracticable at present in this country, and he does not think a place for such a business could be conveniently provided within station limits. The Traffic Managers of the Bombay, Baroda and Central India state that the establishment of grain elevators or warehouses is unlikely to prove profitable on the Bombay, Baroda and Central India Railway proper, that is, on the broad gauge section of the undertaking; and that on the Rajputana-Malwa or metre-gauge section there are no stations where the scheme would have much chance of success; but that as an experiment could do no harm; Sirsa, Hathras City, and Delhi are suggested as stations most suitable for a trial.

The Bombay Port Trustees confine their remarks to the question of erecting elevators at the docks, and they think they are not required on their property.

At a meeting held at Agra a side issue was raised in regard to the preferential aspect of the question of giving a private Company facilities on railways which were not or could not be given to other undertakings, and it was concluded that the intervention of Government in the form of a private Bill, entitling the Grain Elevator Company to certain privileges, as an undertaking for the public benefit, would be necessary in dealing with this matter.

Prospects of success.

A perusal of the printed correspondence will show that the project is not warmly received and its prospects are not considered very promising. The matter has been treated more in regard to the scheme in its entirety than to the simple commencement proposed, and should possibly be so treated, for any concessions made by Government in the matter of the small beginning would necessarily be demanded as the scheme enlarged.

Many of the objections made in the printed correspondence are based on the final intention of carrying grain in bulk; it is only proposed at the start to clean and grade and return the grain into bags. No Railway Company could have the slightest objection so far. The places of business for such operations could possibly be conveniently situated outside station limits, and the construction of sidings, whether at the Railway or the Elevator Company's expense, would follow when the traffic in grain demanded it.

Government Concessions.

There seems no reason why Government should be asked to countenance an enterprise such as is proposed, except the statement of the projectors that it cannot be undertaken without certain concessions.

The amount, if any, of assistance of Government officers in the matter of its certificates will be considered in other Departments. The matter has, however, been touched upon in the last letter of the printed correspondence. It is doubtful whether Government should be expected to give land free to a trading Company of this description when it is not

given to other undertakings, also serving to develope trade and improve the country; but, perhaps, an arrangement might be made by which Government would get some share of the profit after the first five years as a set-off against the value of the land supplied. The land, if supplied, should not be in the railway limits of a Government Railway Company, to whom land for railway purposes has been given free by its contract; but if any land can be spared within railway limits it should be relinquished by the Railway Company and connected, if necessary, by sidings as in the case of cotton mill and other companies.

The opinions of large companies, such as Messrs. Ralli Brothers, to whom allusion has been made in the printed correspondence on the general question, would be of great value.

32.

From Agent and Chief Engineer, Southern Maratha Railway, to Consulting Engineer for Railways, Bombay, No. 6284—1764, dated 3rd March 1890.

Replying to your No. 1184, dated 10th February 1890, I have the honour to forward copy of letter No. G--78536, dated 25th idem, from the Traffic Manager on the subject of grain elevators.

Scheme should be assisted.

The advantages that must accrue from any measures tending to promote the reputation of Indian wheat, both at the centres of the export trade and in the European markets, are so well known that it is not necessary to discuss them here, and a system of cleaning and grading up-country with unquestionable certificates of standard of purity would in my opinion fully secure that very desirable object.

The introduction of the elevator proper is but a secondary consideration. By its means much of the labour and expense connected with the operations of handling and bagging would be obviated, and to me it seems that such facilities must inevitably result, when once confidence in Indian wheat is established, to such an extent as to create a steady demand in the European marts.

The concessions asked for by the promoters are no doubt very great, but considering the vital importance of the subject, I should be inclined to assist them, so far as possible, within reasonable limits.

33.

From Traffic Manager, Southern Maratha Railway, to Agent and Chief Engineer, Southern Maratha Railway, No. 78536 G., dated 25th February 1890.

In returning the original papers received from you on this subject, I beg to inform you that I highly approve of the proposal to introduce grain elevators into India. The competition between Indian wheat and that grown in America and Russia is not unlikely to be exceedingly keen in future, and everything which can be done to promote a demand for Indian wheat should be done in the interests of the country at

large. The quality of Indian wheat would be greatly improved by the cleansing process to which it would be subjected in the elevators, and facilities for dealing in wheat of known grades would be much increased. It is to be hoped that the Government will countenance the proposal and so help in placing the grain trade, on which the prosperity of Indian railways so much depends, upon a sound and satisfactory footing.

34.

From Agent, Great Indian Peninsula Railway Company, to Consulting Engineer for Railways, Bombay, No. 24 I—3082, dated 18th March 1890.

I am desired to acknowledge receipt of your No. 1182 of the 10th ultimo, covering papers regarding the introduction of grain elevators into India.

The object of the promoters is stated to be the cleaning, grading, and handling of wheat, based upon the system adopted in the United States.

The conditions attending the growth and export of wheat from India are so entirely different from anything in America that the success of elevators in the States is worthless as an argument for their success here.

The Agent does not consider the grading of wheat by a public Company is the simple thing suggested; to his mind the scheme is at present impracticable; in this country the various qualities, small parcels, and want of large trade centres would, owing to present difficulties of transit, present insuperable difficulties.

Unsuitability of American system.

The elevator system in America is connected with owning, selling, and speculating in grain, unsuited, the Agent would think, in every sense to the wants of trade here, and the inducements would certainly have to be considerable before the ryot stored grain with an Elevator Company. At present he can do it himself without cost in fine weather, and in the rains he pits it and preserves it; while a Company, such as is suggested, would find a large loss at the end of the wet season from weevils; but on this the opinion of the Chamber of Commerce will be far more valuable.

Regarding the railway, a place for such a business could not be conveniently provided within station limits; beyond that the railway is glad to receive produce from all for transhipment, and willing to do all in its power to facilitate business with this port.

35.

From Secretary, Bombay Port Trust, to Consulting Engineer for Railways, Bombay, No. 2021, dated 7th May 1890.

Your letters of 10th and 27th February last (Nos. 1185 and 1645) and their accompaniments have been submitted to the Trustees, and I have been directed to forward the accompanying copy of the Docks

Superintendent's report on the question of erecting grain elevators at the Trustees' Wet Docks, and to intimate that in the opinion of the Trustees grain elevators are not required on their property.

36.

From Docks Superintendent, to Secretary, Bombay Port Trust, No. 165, dated 7th April 1890.

Existing facilities at Bombay docks.

In considering the question of introducing the elevator system at this port, it seems necessary, in the first place, to notice that some portion of the facilities that the proposed scheme is expected to provide for the trade, already exists at the docks.

Sidings connect the docks with the railway lines, warehouses are provided for the storage of goods, and warrants are issued for goods deposited in the Trustees' charge, by means of which, like the certificates of the elevator system, goods may be transferred from hand to hand and advances obtained.

These facilities might have been extended and improved to meet the further needs of the trade had there been any indication on the part of the trade to take advantage of them.

But so far as the grain trade is concerned the facilities referred to have never been used. The same cause that has hindered their use will also hinder the introduction of elevators, namely, that the common practice is not to ship grain direct as it arrives at the railway terminus or boat wharves by land or by sea, but to remove it into the town to be there stored, sold, cleaned or repacked, and at the time of shipment it returns to the docks in the shape of complete consignments.

All the grain dealt with at the port is also, as is well known, received in bags and shipped in bags. Under the elevator system it is intended to deal with grain in bulk.

With regard to the shipment of grain in bulk it has to be pointed out that in Bombay shipments are made to a dozen different ports in Europe, and that a number of different consignments of various descriptions of grain, seed, &c., are nearly always carried in the one vessel. It may be practicable, when comparatively large parcels are carried, to take it in bulk, but a number of small consignments must be bagged in order to keep them separate.

A large number of vessels that take exports have come with coal, and the cleansing of the holds for the reception of grain in bulk will take longer than the simple process of sweeping them out when grain is being carried in bags.

The means are also already provided for the rapid loading of vessels in an abundant supply at the docks of the most improved style of hydraulic cranes, by the use of which vessels may easily be loaded well within the number of lay days that it is customary to allow in the charter parties at this port.

The expenses of the vessel would be increased by the provision of the various fittings, such as cross bulk-heads, shifting and covering boards, feeders, &c., that are required in the conveyance of grain in bulk, and would have more or less to be renewed on each voyage.

The Trust is mostly concerned with the part of the scheme that refers to the establishment of port storage elevators, for which it is expected that land will be provided free and connected with the lines by sidings.

It is supposed that the Trust will benefit from the concentration of the traffic at the proposed elevators; but if elevators be provided at all it would be at the docks, and the whole of the export traffic to Europe now goes there.

The intervention of a private Company in the arrangements for dealing with goods at the docks is so obviously undesirable as to require no remark. There has been no hesitation on the part of the Trust in providing whatever facilities the trade may require, and if the elevator system of cleaning and grading wheat be generally adopted by the trade, any alteration that might in consequence have to be made in the arrangements at the port would be carried out by the Trust.

37.

From Agent, Bombay, Baroda and Central India Railway, to Consulting Engineer for Railways, Bombay, No. 6663 T., dated 29th May 1890.

In reply to your letters Nos. 1183 and 1643 of 10th and 27th February last, respectively, I have the honour to forward, herewith, copies of reports submitted by the General Traffic Manager of this Company regarding the proposed introduction of grain elevators in India. This Company fully recognises the necessity of improving the condition of grain as it is at present exported from India, and will be prepared to give all reasonable facilities that lie in its power for the establishment of elevators at stations on this Company's system.

38.

From General Traffic Manager, Bombay, to Agent, Bombay, Baroda and Central India Railway Company, No. 1050, dated 18th February 1890.

Anything calculated to lay down Indian grain in the home market in a clean and creditable condition would no doubt increase its value and help to establish the reputation of India as a grain-growing country.

2. I am not, however, sure that the establishment of grain elevators or warehouses would prove a profitable undertaking on the broad-gauge section of our railway, and it is to this district that I desire to confine my remarks.

Practical difficulties.

3. There are no large grain-growers or persons largely engaged in agriculture, but on the contrary all are on a small scale, and grain is almost invariably bought from the producers by middlemen and is packed off to market in the state in which it is purchased; any cleaning that takes place being done by the retail dealer.

4. Very little grain grown in the districts through which our line passes finds its way seaward, as nearly the whole of it is consumed locally or within the districts served by our line.

5. So far as the railway is concerned, elevators or bonded warehouses could not, I think, help our arrangements, but on the contrary they might be found inconvenient for the following amongst other reasons :— Possible inconvenience to railways.

(*a*) If grain is brought to our stations in bags it can be loaded wherever wagons happen to be standing, and a cart can get near them, or bags can even be carried from carts if wagons cannot be placed where carts cannot approach them.

(*b*) In like manner on arrival at destination the bags can be easily treated, and if required to remain in our custody for some time, wagons can be readily unloaded and the bags stacked.

(*c*) If elevators were used there would be trouble in shunting wagons to them, and a siding or sidings would have to be set apart for easy access to where they were.

(*d*) If grain was loaded in wagons in bulk, a particular class of wagons would be necessary, and such wagons might not be eligible for the general purposes or to convey the class of traffic going to grain-sending districts. Open wagons, of which we have a considerable number, would not be suitable to carry loose grain.

(*e*) On arriving at destination grain would have to be, for ready transit in carts, loaded in bags which would be a great tax upon our station resources on account of the time occupied and the extra area necessary, and wastage would ensue. We at present find it necessary to charge grain, when sent loose, a higher rate than when sent in bags for these reasons.

6. I do not see how benefit can be derived when grain has to be shipped in docks, as it would be a difficult matter where there are several miles of wharves to get ships alongside a particular elevator, and they are not generally unmoored from the time they commence unloading cargo until they finish taking in their return cargo, nor will it be convenient for a ship to load grain in bulk only, or to confine its load to a particular class of goods or with cargo for a particular firm. Shipping difficulties.

(*a*) Any attempt to shunt wagons containing general merchandise alongside a particular ship, even if rails were placed along each wharf, would be attended with much inconvenience, as where ships, thirty or forty or more in number, alongside wharves were giving out and taking in goods, it would be next to impossible to get to each or any particular one with wagons. One ship might load or unload forty or fifty wagons daily, another might load two or three, another might contain goods for Bombay City only.

(*b*) We can, and do occasionally, get near ships with wagons when there are heavy consignments of, say, railway material, but we never or rarely ever get alongside them.

(*c*) Our docks in Bombay are, I think, as well suited for trade as most docks, but we could not make a distribution or collection of goods to and from ships even if there were two lines of rails and numerous turntables for which there is not space along the wharves.

(*d*) Most of the grain that arrives in Bombay is sent by men who purchase from the grower to middlemen or agents in Bombay who sell to merchants who export it.

There is at least one firm of merchants, the largest to be found anywhere, who have salaried agents throughout India who purchase grain, cotton, and other produce to a very great extent. Such a firm might carry out grain-cleaning arrangements at stations where goods are first placed on the railway; but whether or not they could command a higher price for their purified article so as to cover expenses is somewhat doubtful. If this colossus firm, who have the means of getting as near the grower of grain as it is possible, have unlimited capital, and their own houses in England and on the Continent of Europe and elsewhere do not think it worth their while to try and improve the quality of Indian grain and adopt the very best means for its transit; I cannot imagine any one else or any Company of persons making a successful experiment.

39.

From Traffic Superintendent, Rajputana-Malwa Railway, to General Traffic Manager, B. B. and C. I. Railway, Bombay, No. 757 H., dated 6th February 1890.

It is difficult for an Executive Officer whose time is very fully occupied to form an opinion worth having upon the very complex problem presented in these papers. Personally I have no experience whatever of the grain elevators which are said to be so successful in Russia and America; it seems to me, however, that the conditions of production in India are so entirely different to those in America that any calculation based upon comparison of the two countries will be apt to lead one astray.

2. The great bulk of our export trade in wheat and seeds is in the hands of a few large merchants of Bombay, Karachi or Calcutta; these have their agents in all the districts of India. Ralli Brothers, for example, are met with by their agencies all over the Continent, wherever grain is produced; they have their own cleaning yards at important centres, as at Nagpur, &c., and have a firm hold upon produce as ready purchasers, that would not be easily shaken.

Obstacles.

3. The idea of the promoters of the present movement seems to be to introduce a system of central mart to which producers should send their produce in exchange for negotiable receipts of the same utility as bills of lading, and it is probable something of this kind may eventually come to pass; but until the Gujarat cultivator is educated up to something like the standard of intelligence of the Yankee farmer, the Government of this country more nearly approaches the Russian system of administration, I doubt if much will be done.

4. The Indian ryot deals with his village *bunya*, without whose advances for seed and current expenses he would be powerless; and the *bunya* again deals with the agents of the large exporting firms, and these latter could hardly be expected to view the introduction of a kind of third class of middleman in the Grain Elevator Company with very much favour.

5. In the language of a cultivator I should say grain elevators will answer when they are a product from the plant of "Indian Export," but as a graft they will be a failure.

6. It seems to me in any case that if these elevators are to have much chance of success, they must be located in the very heart of wheat-growing centres; neither Hathras nor Agra are exactly the places where wheat may be termed the staple commodity of the surrounding district; whereas Gujranwala on the North-Western line and Raipur on the Nagpur-Bengal Railway are exactly the places adapted to the purposes of this experiment. Both Hathras and Agra are rail centres of importance, but are both too far from the home of production to quite meet what is required. I shall be glad to meet Mr. Holderness at Agra if you wish me to do so. Director, Land Records' No. L.S.—5 of 1st February 1890, with accompaniments, are enclosed. Please return with instructions.

40.

From Traffic Superintendent, Rajputana-Malwa Railway, to General Traffic Manager, B. B. and C. I. Railway, Bombay, No. 1679 H., dated 26th March 1890.

With reference to your memorandum No 933 of 12th February, and to your subsequent memorandum No. 1297 of 4th instant, both of which, with accompaniments, are returned herewith, I beg to inform you that I met Mr. Holderness at Agra on the 22nd instant; Mr. Finlay, the Collector, and also the Municipal Secretary, were present at the interview.

2. It was considered that the view taken of the position in my memorandum 757 H of 6th February referred more particularly to the financial prospects of the Grain Elevator Company, and that we were desired to consider the question of concessions to such a Company, which the Government or the Railway might be expected to give; I said that the railway would, I believed, be disposed to assist, at well-selected stations, under certain conditions, in the matter of sidings and sites for cleaning sheds, but that a serious difficulty arose in regard to the preferential aspect of the question. Mr. Finlay was doubtful whether the railway could give to any one private undertaking facilities it was unwilling or unable to give to others, and instanced cotton presses, &c., as undertakings worked with a view to profit, which had not hitherto been specially assisted either by Railway Companies or Government. It was concluded that the intervention of Government would be necessary in dealing with this matter, and that such intervention might have to take the form of a private Bill, entitling the Grain Elevator Company to certain privileges as an undertaking for the public benefit. Agra conference.

3. Mr. Holderness considered that a monopoly might be conceded on certain lines of railway for a term not exceeding ten years, and that where such monopoly existed, it should be held that the Grain Elevator Company must construct cleaning and storage godowns when required by Government, or in default should have no right to prevent other people from doing so.

4. He further held that Government from its position and multifarious duties would be unable to undertake this work of grading and classifying wheat; that the Railway Companies would be travelling beyond the limits of their legitimate work if they were to undertake it; and that the only persons who could do it would be an assisted firm or private Company, working somewhat on the lines of that suggested by the promoters of the present movement.

5. There were other details of concession referred to in more or less undecided terms, which did not concern me; but I think Mr. Holderness will be inclined to recommend his Government to support the movement to a certain extent.

Stations suggested.

6. As an experiment no harm would be done, and I was asked to suggest three stations on this line which seemed most suitable for a trial; I thought Sirsa, Hathras City, and Delhi appeared to be about the best; the latter might, I considered, be an adjunct of the new line to the Gunj near Lahore Gate.

7. Nothing very definite was recorded, and on the general question it was, I think, felt to be a doubtful point whether anything was really needed. I was able to tell the meeting that Ralli Brothers' Agent at Ferozepore had informed me that in London, before coming out to this country, he had contracted on behalf of the firm to deliver Bombay wheat with 94 per cent. white, 4 per cent. red, and 2 per cent. *only of extraneous matter*: these figures, it will be seen, fall very short of the standard arrived at by Mr. Cradock, Secretary of the London Corn Trade Association (*vide* papers which accompanied your memorandum 1297 now gone on to the Engineer-in-Chief as desired).

41.

Government of Bengal, to Government of India, No 2713—279 Agri., dated 31st July 1890.

With reference to Mr. Muir-Mackenzie's Circular letter No. $\frac{122-127C.}{\text{Agriculture}}$ dated the 6th January 1890, and subsequent communications, I am directed to submit, for the information of the Government of India, the accompanying copy of a letter from the Director of the Department of Land Records and Agriculture, Bengal, No. 1603 Agri., dated the 14th July 1890, and of its enclosures, reporting on the proposed formation of a Company for the introduction of grain elevators into India.

2. The Lieutenant-Governor agrees with Mr. Finucane in the conclusions at which he has arrived. The creation of a market for pure Indian wheat in England is most desirable, and very favourable terms may properly be granted to any Company which can operate effectively in that direction. But the alteration of the methods by which wheat is cleaned is not shown to be an enterprise meriting special support at the cost of the State. It is a matter which, in the Lieutenant-Governor's opinion, may very properly be left to private enterprise.

42.

Director of the Department of Land Records and Agriculture, Bengal, to the Government of Bengal, No. 1603 Agri., dated the 14th July 1890.

I beg to acknowledge the receipt of your No. 386-48, dated 23rd January 1890, calling for report on certain proposals made by Mr. James G. Smith of Bombay, relative to the formation of a Company for the introduction of grain-elevators into India. In reply, I have the honour to report that I have consulted the public bodies, firms, and individuals, named in the margin, on the subject, and now forward their reports.

1. Secretary, Bengal Chamber of Commerce.
2. Secretary, Agri-Horticultural Society of India.
3. Vice-Chairman of the Port Commissioners.
4. Shipping Master, Calcutta.
5. Collector of Customs, Calcutta.
6. Managers of State Railways.
7. Messrs. Ralli Brothers.
8. „ Moran & Co.
9. Secretary, Brokers' Exchange.
10. Messrs. Anderson, Wright & Co.
11. „ Gladstone, Wyllie & Co.
12. „ Balmer, Lawrie & Co.
13. „ Lorraine, King & Co.

2. It will be seen that the preponderance of opinion is much against the proposals made by Mr. Smith The Bengal Chamber of Commerce write thus—

Bengal Chamber

The Committee of the Chamber of Commerce have given their best attention to the papers forwarded with your docket No. 463-Agri., dated 4th March, and I am now directed in reply to state that in their opinion any attempt to introduce the grain elevator system into this country would be at least premature. Mr. James G. Smith, in his letter to the Secretary of State, dated 17th September 1889, after enumerating the benefits that would result from the system, and pointing out directions in which the assistance of Government would be necessary, suggests a tentative commencement of operations by the "Grain Cleaning and Elevator Company," pending which the efforts of the promoters would be directed to securing a demand for the clean and graded wheat.

The result of the agitation of last year in favour of clean Indian wheat does not encourage the Committee in the belief that the efforts alluded to by Mr. Smith would meet with any great amount of success. But should a real demand arise for clean Indian wheat, they are of opinion that private enterprise will be equal to the occasion without requiring either the assistance of or a guarantee from Government.

It is not necessary to discuss the suitability of the elevator system to the conditions of the grain trade, at least on two sides of India, further than to say it is open to doubt whether, considering the heavy expenses which the proposed Company would incur, such a Company could successfully compete with the simple but effective methods of cleaning already known to those who deal in grain. The committee, moreover, consider that the proposal that the Company should hold grain for the owner for an indefinite time, and accept the responsibility for it ∞ condition, is scarcely one suited to India, owing to the risks attending keeping wheat in this country for any length of time.

The Committee would point out that the scheme contemplates concentrating the grain trade at a few important stations on the principal wheat-bearing railways, and to this extent is diametrically opposed to the policy pursued for the last eight or ten years by Government, a policy which, by abolishing the special reduced rates allowed by the railway administration, for large consignments, aimed at giving petty stations equal facilities with the larger depôts for sending produce to the coast ports. The Committee understand from the principal exporters of wheat that the opening up of these petty stations is largely responsible for the deterioration in the cleanliness of the wheat brought to this port, for whereas this produce was formerly concentrated at

some few important stations, there piled and rebagged, it is now forwarded direct, without any piling, handling, or cleaning, to the coast port. While the Committee are of opinion that it is now impossible to nullify the results of this policy and revert to the old system of special rates for consignments of 200 tons, they would urge most strongly upon Government the necessity of permitting the railways to raise the limit for special class consignments of wheat and seeds intended for export, from the present limit of a wagon load to a minimum load of 50 tons.

This will have the effect of making a broad line between wheat intended for export and that for local consumption.

It would assist in raising the standard of cleanliness.

It would place the trade in the hands of men of some little means, instead of opening it up, as at present, to impecunious gamblers.

It would lessen the work needful to be done at the shipping port, and permit of the grain being properly sampled and examined, and so put a check to the false packing and swindling which is encouraged by the system of petty consignments.

The Committee have reason to believe that if this slight reform were introduced, the benefit resulting to the trade would be so great as to leave little to be desired in the condition in which rail-borne wheat would reach the home market.

Agri.-Horticultural Society.

2. The Agri.-Horticultural Society say—

As the different Chambers of Commerce have been consulted, and as the views of the commercial community will thus be laid before Government, the Society deals with the question wholly in its relation to the cultivators.

The establishment of the elevators for the purpose of cleaning grain for export is, the Society consider, not likely to be of any direct benefit to the grower, for the reasons set forth in the following paragraphs.

The conditions under which wheat is grown in India, the small quantities each grower places on the market, the poverty of the people necessitating their selling their produce without delay, and other causes, preclude there being any chance of their being able to avail themselves of the facilities for cleaning offered by the system.

As a rule Indian wheat is not purposely adulterated by the growers. The impurities which exist in it when it leaves their hands are due to the system of cultivation and thrashing which are too well-known to need description here.

The growers winnow and clean their wheat to the extent their crude appliances will admit, and undoubtedly some of the earth from the threshing-floor and an admixture of other grains must remain in the crop. This is estimated at 2 to 3 per cent. of earth, peas, and barley. But as the Calcutta contract is for 5 per cent. up to August and 6 to 7 per cent.* after that, it therefore pays the seller to adulterate his batch up to 2 per cent. over the guarantee, or he will lose on the average. This is such a well-established custom that a regular market price for suitable adulterants exists in the exporting districts, and the seller purchases such materials and mixes it with his wheat. The shipper has the lot examined and makes the best bargain he can as to allowance with the seller and sells "fair average" at home: practically his profit is what he gets in this way.

It is probable that even the buyers who collect grain, buying the small quantities sold by individual growers at *hâts* and bazars, and selling again to dealers and merchants' agents, are not likely to be able to deal directly with exporters through the elevators.

There is one feature in what is known as the elevator system which would probably affect the grower prejudically.

The system is that all grain passing into the elevator is graded and bulked, and a receipt given to each constituent, who, when he requires his grain, receives his quantity from the bulk.

The bulking of such large quantities gives a more even standard than at present exists in India, and these recognised standards again being fixed, their relative prices are fixed.

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* Should be 5 per cent. up to 30th June, afterwards 6 per cent.

As a matter of practical convenience the number of standards or grades will have to be limited, and the present elasticity done away with, so that a superior sample falling into a given class will fetch no more than an inferior sample which is just good enough to pass the standard.

There will therefore be no incentive to buy the best quality of a certain class ; the endeavour will be to get the cheapest grain which will pass the standard. This may not matter to the merchant, but the grower who produces a better sample of grain of the same class as his neighbour's will be no gainer.

I am directed to say that for the reason already given this Society does not enter into the question of the effect which the introduction of elevators would have on the trade in wheat. The Society is aware that there is much to be said from a commercial point of view for the establishment of fixed grades of clean wheat, and for other results of the elevator system. Without offering an opinion on these points or on the system as a whole, I am to point out that in India the existence of the weevil pest would have to be taken into consideration as a factor against the collection and storing of grain in the manner proposed, and special means would have to be contrived to guard against its ravages, more especially were wheat held over for any time.

The Society is aware that the papers before them contain merely an outline of the scheme proposed. They think, however, that there being no allusion to one of the greatest evils with which Indian wheat has to contend is a serious omission.

I am to submit that, if the object of the Government in entertaining the scheme under consideration is to put a stop to the intentional adulteration of wheat in India, a simple remedy exists, *viz.*, to enact that no contract for purchase or sale of wheat will be considered valid unless the price agreed upon is held to be for pure grain. As long as sellers can go into Court and enforce a contract for wheat with 5 per cent. to 10 per cent. adulteration, the evil cannot be stopped. If the price paid was for pure wheat only, no one would expend money on the railway carriage of adulterants which would be deducted from the price, and no exporter would pay freight and charges, unless he got from the seller the full equivalent of what he would lose for any adulterations.

3. The Port Commissioners are of opinion that "the scheme contemplated is not one which is suited to this country, or one which should have the support of Government of the kind asked for." It, however, seems to them that if the requirements of trade necessitated the introduction of such a system, and there was a prospect of its proving remunerative, it would be taken up by private enterprise. Port Commissioner.

Messrs. Anderson, Wright and Company remark—

The application of the American system to India is, in our opinion, not what is wanted. Indian wheat is all shipped in bags, whilst American goes to a large extent in bulk, and the elevator is of no use where the bagged article is the rule. This Messrs. R. S. and Company really concede when they come down to proposing to open at a few stations, and conduct thereat simple cleaning and grading operations, returning the grain into bags properly secured. Anderson, Wright & Co.

We think most firms having up-country connections have tried this, but home buyers and brokers are too powerful and will not allow settlement to be made based upon the clean wheat. With an ordinary graded netting and a few coolies, 100 tons daily can be turned out in any godown at a nominal expense without a Government guarantee, and up-country firms, both Native and European, would gladly see a market for clean wheat forced on exporters. This can be accomplished by Government enacting, both here and in England, that no contracts will be recognised in a Court of law unless based on a price for the pure wheat. We have pointed out again and again that there is no justification for the acknowledgment in Court of a contract for wheat with 5 per cent. or 10 per cent. adulteration. The only basis of sale recognized by law should be that of pure wheat, and were this the case no up-country dealer would risk paying railway carriage on five tons of dirt for every 95 tons of pure wheat, and no buyer would accept of wheat without getting the full equivalent of the loss he would sustain on the refraction by sending the parcel to Europe. As long as the law recognises contracts for adulterated wheat, so long will the trade in it continue.

Ralli Bros. 4. Messrs. Ralli Brothers have no experience of the working of elevators in America, and they are not in a position to express a decided opinion on the subject further than to say in a general way that, viewing the distinct nature and diversity of quality of the Indian grain compared with American, they very much question whether the introduction of any such system in the handling of Indian grain would be successful.

Of the Agents and Managers of railways, the Agent of the East Indian Railway says that until the elevators are introduced the purity of Indian wheat and seeds for export cannot be guaranteed. At the same time he remarks that until a proper understanding is arrived at between seller and buyer, it would be useless to attempt to introduce them

E. B. Railway. The Manager of the Eastern Bengal State Railway states that the railway traffic in wheat and seeds on that line is small, and it is unlikely that an elevator would be required at any of the up-country stations on the Eastern Bengal State Railway. He adds that if higher railway freights could be obtained for wheat dealt with in elevators, the consignor would consider that he paid the Elevator Company the cost of handling his grain, and would probably call for a corresponding reduction in the rates. The railway would effect no practical saving in being relieved of the cost of receiving and watching the grain. He further says that the free grant of land at metropolitan stations and on Port Trust property is a very large concession, but the demands of the promoters appear to him generally to be exorbitant. If they have any real belief in the effects to be produced from the introduction of the elevators, on which so much stress is laid, the Company should be assured of the success of the project on its own merits without calling on Government to guarantee interest and to grant free land. He further adds that the venture is a novel one in this country, and if the promoters were prepared to erect elevators on one railway, and at one port, they might reasonably be given a monopoly for 25 years and land free of rent until such time as the undertaking paid over a certain percentage, when arrears could be made good. But as regards the proposals for cleaning, grading, and storing wheat without incurring expenditure on elevators, it seems to him that if such a course could be commercially undertaken at a profit, it would have been introduced long ago without any Company or guarantee.

Tirhoot Railway. 5. The Manager of the Tirhoot State Railway is strongly in favour of the scheme of having elevators at large and important stations, but he doubts very much their giving any return on the capital outlay on a line like the Tirhoot State Railway, where the stations are situated so closely together. He is of opinion that the railway staff should not have anything to do with the working of the elevators from a mercantile point of view, such as sampling, &c. The railway might give lands and sidings, but he is opposed to giving any guarantee or granting a monopoly to any one firm or Company.

Nalhati Railway. The Manager of the Nalhati State Railway is of opinion that the scheme is one which deserves the encouragement and support of Government.

6. My personal opinion is that the general scheme described in

paragraph 1 of Mr. Smith's letter, dated 17th September 1889, is one which cannot be seriously entertained, and need not be considered or criticised in detail. It would be obviously out of the question, to provide land free of cost, for the Company's purposes at or near every railway station on every line "built or to be built" in the grain-producing districts, or to guarantee that similar facilities will not be afforded to competing Companies, or to guarantee interest at 4 per cent. on any amounts which the Company may deem it desirable to expend, and it is very doubtful whether arrangements can be made in India for countersignature, by Government officials, of certificates of the grading of wheat. As pointed out by Viscount Cross, it is clearly impossible that Government should assist Mr. Smith's project in these matters to the extent suggested, and the only practical question for consideration, at present, is, whether any, and, if so, what support should be given to the specific proposals described in the latter part of Mr. Smith's letter thus—

Scheme as described cannot be entertained.

In this view, we would propose to select a few stations on some of the principal grain-carrying railways, and to conduct thereat simple cleaning and grading operations, returning the grain into bags properly secured and covered by certificates as to the quantity and quality, thus discarding for the present the idea of the elevator proper.

In the English markets our efforts would be directed to securing a demand for the clean and graded article, and further development of the scheme would be dependent upon the results obtained. We have reason to believe that in the English grain centres, accustomed to the American system, the certificates above referred to will speedily receive the credit they deserve, and so soon as they become recognised in the English markets, and thus act to the benefit of the producer, the steady development of the scheme may be confidently anticipated.

The railways on which it is proposed to commence are—

The Great Indian Peninsula Railway,

The Bombay, Baroda and Central India Railway,

The Bengal-Nagpore Railway,

these being contributory to the one shipping centre of Bombay, between which place and Liverpool the trade is considerable, while Liverpool is a port already accustomed to the American system of clean and graded grain.

The authorities of the abovenamed railways have been addressed, and, so far as at present ascertained, the scheme will be favourably received and supported by them.

The stations at which machinery is proposed to be erected will be selected in communication with the Companies.

It is probable that in all some fifteen stations at the outset will be provided with cleaning, grading, and weighing apparatus and with some elevating machinery, all of which will have to be sheltered from weather by buildings sufficiently strong to withstand the vibration of the machinery, and constructed with some regard to their future uses.

The machinery may be worked by bullock or steam power, as circumstances may require. It appears to us that the undertaking will necessitate the sending to India of a few qualified men to commence, conduct, and instruct in the operations, but we would desire to avail ourselves of the assistance of the Railway Companies' staffs to the utmost extent possible.

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We believe that the whole of the machinery required in the first instance is readily obtainable in England, and, including freight, railway charges in India, and other expenses we estimate its cost at	7,500
The buildings at fifteen stations, with cost of fittings and erecting machinery, would probably cost . . .	10,000
The pay and allowances of staff, preparatory to the commencement of work, may be taken at	5,000
And preliminary and contingent expenses at . . .	2,500
Making a total of .	25,000

Besides keeping the capital expenditure within the narrowest limits, it would be our object to keep down the working expenses and charges as low as possible. In the more advanced stages of the undertaking, the charges to be made will, beyond doubt, be far more than covered by the saving in cost of handling, &c., but during the preliminary operations just described the charges for cleaning and grading must be reduced to a minimum, to be covered by the enhanced value of the clean grain, and still leave the ryot sufficient inducement to avail himself of the advantages offered.

During this period of education and experiment, we can hardly expect the machinery to do more than pay the expenses of its working, but each subsequent step in advance should put our operations on a more satisfactory footing.

So soon as demand for clean and graded wheat is secured in the United Kingdom, a demand on the part of the producers or owners for the cleaning and grading of their wheat will certainly follow, and as this increases so will the present scheme progress towards the erection of a complete system of elevators, and as success becomes assured on one or more lines of railway leading to one port, so will other lines of railway and other ports be supplied with similar advantages.

All extensions of operations involving expenditure beyond the amount of £25,000 referred to in this paper would be submitted for the sanction of the Secretary of State for India in such manner as he may direct, and we confine our present request for a guarantee of interest to a half-yearly payment, calculated at the rate of 4 per cent. per annum on the £25,000 already indicated, and on the subsequent sums sanctioned from date of such sanction, for a period of five years from that of the acceptance of the proposals which we have the honour to make.

The capital of a Company sufficiently important to deal adequately with the subject of our representation must necessarily be large, but at starting the amount to be called up would be limited to £25,000, and during the continuance of the guarantee further calls must be restricted to amounts necessary to cover extensions duly sanctioned.

Inducemen to clean wheat.

7. It will be observed that the proposal here is to abandon at first the American principle of the grain elevator, to return the grain in bags, after cleaning, to the owners, and let them dispose of it as best they can. But if, as is alleged, an adequate price cannot now be obtained for clean grain, and if it pays, as it certainly does, to have the grain as produced from the threshing-floors, mixed with dirt, the question arises why should the owners bring their wheat to the elevators to be cleaned, and if they did bring it, why should the fact of its having been cleaned secure for it an adequate price, seeing that clean grain does not fetch an adequate price? Wheat can now be cleaned at a very low cost, and machinery was introduced for the purpose by Messrs. Ralli Brothers and others, but it was found that the clean grain, when exported, did not realise a relatively better price, and it is not clear how the fact of its having been cleaned by an elevator will cause it to do so, especially as the process of cleaning by elevators will, according to Messrs. Ralli Brothers and others, be more expensive than cleaning by native agency with sieves. For these reasons I am of opinion that ryots and traders will not bring their grain to the elevators to be cleaned, if the grain, when cleaned, is to be returned to them, and they are left to do the best they can in obtaining an adequate price for it. But if

Company must buy clean and Export.

Mr. Smith's Company were to buy the grain from the cultivators and traders on the best terms they can, and were then to clean, grade, and export it at their own risk, and were thus to endeavour to create a market for clean grain at home, it is a question for consideration whether Government would not, in that case, be justified in giving land for the buildings free of cost at or near fifteen selected railway stations on the lines named, and in guaranteeing interest at 4 per cent. for five years on

the outlay for buildings and machinery, up to a maximum of £1,000 per annum. On this point I have consulted, at a meeting (the record of proceedings of which is annexed), Messrs. Ralli and Petrocochino, who as merchants are largely interested in the wheat trade, and Mr. Pallachi, who is one of the principal brokers interested in the trade from the point of view of Native dealers. It will be seen that Messrs. Ralli and Petrocochino are of opinion that Government even in the case supposed would not be justified in giving to the Company the limited assistance suggested, because the scheme of grain elevators has, in their opinion, no chance of success. Mr. Pallachi thinks that this plan is worth a trial, provided that no monopoly is given to the Company. If the Company believes in the efficacy of their elevators in reducing the cost of cleaning grain, and if they believe they can get an adequate price for clean wheat, then they should, he thinks, be prepared to try the experiment on these terms. Mr. Pallachi does not, however, himself believe that the elevators will pay or that the promoters will be able to obtain a remunerative price for clean grain.

Limits of Government assistance.

8. I am of opinion that if any assistance is to be given to the Company, it should be in the way above suggested If the Company are willing to run the risk of erecting elevators at fifteen railway stations, at a maximum cost of £25,000, and if they will make their own arrangements for the purchase and disposal of their wheat, and thus endeavour to create a market for clean grain in Europe, Government may, I think, having regard to the importance of the object in view, encourage them to the extent of guaranteeing interest of £1,000 a year for five years and of giving free sites for their buildings. If the Company succeed in creating a market at home for clean grain at remunerative prices, they may be left to extend their operations without Government interference, and if they fail, the loss to Government can in no case be more than £5,000, and would probably be less.

9. It will be observed that the Chamber of Commerce (which originally moved Government to impress on cultivators the necessity of producing clean grain) hold that the system of elevators is unsuited to India, and from what has been said it is clear that the introduction of them cannot, at best, have much effect for some time to come.

Legislation against adulteration.

10. The question then arises, can nothing be done towards stopping the system of deliberate adulteration now practised and towards securing a supply of clean grain for export? Messrs. Anderson, Wright and Company and the Council of the Agri-Horticultural Society suggest that the only basis of sale recognised by law should be that of pure wheat, and were this the case, no up-country dealer would, they say, risk paying railway carriage for five tons of dirt for every 95 tons of wheat, and no buyer would accept dirty wheat without getting the full equivalent of the loss he would sustain by sending the parcel to Europe. They propose that an enactment be passed, both here and at home, to the effect that no contract will be recognised in a Court of law unless based on a price for pure wheat. The result of such an enactment would be, that not only would there be no inducement to adulteration left, but growers would have an incentive to produce clean grain, which they now have not, and in a short time they would probably do so. Mr. Ralli says the Calcutta merchants would have no objection to such an enactment

if the home merchants have none. The Calcutta merchants are, he says, the servants of the home merchants; they can and will send pure grain if it is wanted and paid for; it is because it is not wanted that it is not sent. Mr. Ralli is, however, at the same time, of opinion that the proposed enactment would be objectionable on general grounds as being an unnecessary interference on part of Government with trade.

11. The Chamber of Commerce are also of opinion that there is no need for legislation on the subject, and regard the enactment of a law, on the terms proposed, as a most undesirable interference with freedom of contract. I also am of opinion that the time has not yet come for legislation of this kind, which should not be had recourse to unless and until the evil complained of is clearly shown to be injurious to the public interests, and until all other remedies have been tried and failed.

12. The question then is what other remedies are possible. In my letter No. 1265, dated 18th August 1887, paragraph 10, it was suggested that wheat might, like oil-seeds, be sold on analysis at home. This proposal was discussed at the conference between Viscount Cross and gentlemen interested in the wheat trade, held at the India Office on the 8th May 1889, and it was stated by Mr. Todd, on behalf of the London Corn Trade Association, that the proposal was impracticable for the following reasons :—

"That wheat might be sold at home on analysis like seeds (Mr. Finucane's report, page 13). That the Corn Trade Associations might be asked to fix the refraction on all sale contracts of wheat at not over 2 per cent. (Mr. Forbes Adam's letter to His Excellency the Governor of Bombay, paragraph 26).

"This question of selling wheat on a percentage rate of refraction has on various occasions occupied the attention of the Sub-Committee (Indian section) of the London Corn Trade Association, and had also been discussed by the General Committee of the London Corn Trade Association, but the principle so far has been considered impracticable.

"There is a great difference between selling seeds and wheat on analysis.

"*1st*.—The quantity of any description of seeds sold is very considerably smaller than that of wheat.

"*2nd*.—Seeds, especially linseed (by far the largest trade in seeds), show little variation in quality, and hence it is practicable in large parcels of linseed to have the analysis made on *one* average sample to determine the whole shipment. This, with the variations in quality, admixture, &c., &c., in wheat, almost from bag to bag, is *impossible*, and therefore it would be necessary for every small parcel of 50 tons or 100 tons to have separate average samples drawn, and have them analysed.

"*3rd*.—In seeds, owing to the above slight variation in quality, a comparatively small sample is analysed; whilst in wheat a considerably larger sample will have to be analysed; and thus the cost will be greatly increased.

"The charge for analysing a sample of linseed is 5*s*., whereas on wheat we believe it has not yet been done under £2 2*s*., a very heavy charge on 50 tons or 100 tons of a poor article like wheat.

"*4th*.—The quantity analysed being larger, it naturally will take much longer to analyse, and when in a large parcel of 2,000 to 2,500 tons of wheat something like 20 or 25 analysis will have to be made it can easily be understood that delay must follow, rendering the final settlements protracted and unsatisfactory.

"*5th*.—Lastly and chiefly, seeds are not liable to weevil. Wheat is, and sometimes it suffers *most severely* from this inherent defect. How would the advocates of analysis deal with the weevil flour dust? If they take it as refraction it would be very unjust to the shippers, who, although they may have cleaned down and shipped in India a parcel containing only 2 per cent. refraction, may be called upon through the wheat being attacked by weevil during the voyage to allow on final settlement 5 per cent. and even 6 per cent. or 7 per cent. on refraction, besides making an allowance for quality in consequence of the excessive weeviled condition of the said parcel.

If, on the other hand, weevil flour dust is admitted *not* to be an heterogeneous substance, how is it to be separated from the fine earth, sand, or other impurities? * *

"Seeing, therefore, that the natural condition at present of Indian wheats is to contain about 4 per cent. of admixture on the Bombay side, and 5 per cent. on the Calcutta side; that under the circumstances it is not practicable to induce the Indian shippers to change their system of purchasing and instead of buying on the above natural refractions to introduce an artificial basis of a 2 per cent. refraction; that buyers *practically* are not prepared to pay a *proportionately* higher price for cleaner wheats; that the system of selling on analysis here is altogether impracticable and unadvisable; that the conditions of the Indian wheat trade, although slowly, are gradually improving; that India ships and sells all her wheat available for export year by year, and that her development, in this branch at least, is not prevented by the present condition of her wheats; that the interference of Government in questions of contract as between seller to buyer is inadvisable,—our opinion is that it is not advisable or desirable to try and force sudden and radical changes in the natural condition of a trade, but that it is preferable to let the improvement come gradually out of the trade itself, taking it for granted that merchants, sellers, and buyers, shippers and consumers, &c., are too keenly alive to their interests to allow any opportunity for improvement in their trade, when such becomes advisable, to pass by.

Refraction discussed.

13. In answer to these objections it may be stated that Indian wheat is, as a fact, now bought on analysis in Marseilles, and it appears reasonable to believe that what can be done on one side of the English Channel can also be done on the other. Messrs. Ralli and Petrococchino, who can speak with authority on the subject, say that, so far as they can judge, what is done in Marseilles can also be done in London. The difficulties connected with weeviling are not, they say, insuperable, while Mr. Pallachi says there are no such difficulties. Assuming there are such difficulties, it appears reasonable to suppose that if they can be surmounted on the system of purchasing by fair average quality, they can be also got over if contracts are made on the basis of pure grain. I am informed by competent authorities that it is far easier to refract wheat than oilseeds, and that the process is less expensive and more expeditious. Again, to the statement that wheat, on the Calcutta side, in its normal condition, contains 5 to 7 per cent. of admixture, and that for this, among other reasons, it is not desirable to force sudden and radical changes on the normal condition of a trade, it may be answered that it is *not* a fact that the normal condition of wheat, on the Calcutta side is to contain 5 per cent. of admixture. If it were a fact, there would be no place for wilful and deliberate adulteration. It is only with a view to degrade wheat, as produced from the threshing-floors, from its normal condition down to the required standard of refraction, that adulteration is practised or has any object. "The growers," the Agri-Horticultural Society point out, winnow and clean their wheat to the extent their crude "appliances will admit, and undoubtedly some of the earth from the threshing-floor and an admixture of other grains must remain in the crop. This is estimated at 2 or 3 per cent. of earth, peas, and barley. But as the Calcutta contract is for 5 per cent. up to August and 6 to 7 per cent. after that, it therefore pays the seller to adulterate his batch up to 2 per cent. over the guarantee, or he will lose on the average. *This is such a well-established custom that a regular market price for suitable adulterants exists in the exporting districts and the seller purchases such materials and mixes them with his wheat.* The shipper, it is added, has the lot examined and makes the best bargain he can as to allowance with the seller and sells fair average at home;

Trade in adulterants.

practically his profit is what he gets in this way. In Calcutta, where there are no threshing-floors, the refuse fannings and screenings from merchants' godowns and millers' works are bought by regular dealers whose head-quarters are at Hatibagan. This is sold as pigeon food and is the basis of such adulterants as are used in Calcutta. In the mofussil the adulterants used include refuse, small bits of brick, cow-dung, and a large proportion of earth. The adulteration thus consists in *putting back into* the grain a given quantity of what has been previously removed, so as to degrade it to a low standard."

Agri-Horticultural Society's letter, dated 5th June 1890.

In my report No. 391 T., dated 7th July 1886, paragraph 5, it was shown that the Manager of the Dumraon Raj "had a golah at Itari near Buxar, from which he used to sell wheat on rather a large scale to the Agent of Ralli Brothers at Buxar. The wheat as he got it did not contain 5 per cent. of foreign matter. Accordingly the Manager's servants were directed to mix two maunds of earth with every hundred maunds of grain, so as to bring the adulteration up to the required standard. This earth was treated with water and specially prepared for purposes of adulteration."

Major Boileau, then Sub-divisional Magistrate of Dinapore, wrote :—

The grain-dealers wilfully adulterate their grain, adding about two maunds and thirty seers of dry clay, *bhusee*, and other grains to every hundred maunds of wheat; and Mr. Carnduff, Sub-divisional Officer of Hajeepore, said : "In the hands of the middlemen the grain is lodged in golahs, and such grains as *akla pipra* are intentionally added with a view to adulteration." Again, so competent an authority as Mr. J. Ralli, the head of the firm of Messrs. Ralli Brothers, in Calcutta, says that in his opinion, "relatively pure wheat can be supplied from India. It is a question of price."

Normal impurity.

14. How then in the face of all this evidence is it possible to assert that the normal state of Indian wheat on the Calcutta side is to contain 5 to 7 per cent. of foreign matter? It may be admitted that its normal state is to contain 2 to 3 per cent. of other grains and dust, but the deliberate adulteration with refuse, bits of brick, and prepared adulterants is the result of the abnormal, factitious, and unhealthy system of having a fixed standard of 5 to 7 per cent. of refraction, a system which obviously holds out a direct and powerful incentive to adulteration up to that standard, and makes it positively wrong for Government officers to advise or encourage cultivators to produce pure grain. Neither can it be correctly said, as far as the Calcutta trade is concerned, that the conditions of it are gradually and slowly improving. On the contrary there has, the Calcutta Chamber of Commerce remark, been a deterioration in the quality of wheat brought to this port in recent years. Wheat has, it has been stated, been shipped from Calcutta in the present year in a dirtier condition than ever before, containing admixture of foreign substances up to 12 per cent., while the total quantity exported fell from 217,000 tons in 1887-88 to 147,000 tons in 1888-89 and to 78,000 tons in 1889-90.

Purchase on analysis.

15. If wheat were bought on analysis in London, as is done in Marseilles, there would be no motive for adulteration and no object in exporting dirt, while the normal condition of Indian wheat, to which the London Corn Trade Association attach so much importance, would not

be in any way affected. As to the question of weeviling, on which so much stress is laid in this connection, it is to be remarked that Mr. Charles Whitehead, Agricultural Adviser to the Lords of the Committee of Council for Agriculture, holds that "the foreign matter annexed with wheat imported from India serves as a medium for the wholesale transportation of insects injurious to crops; that the admixture of dirt, seeds, and rubbish causes the wheat to heat, which is detrimental to its quality and at the same time causes the weevils to propagate unusually and to materially damage it. Besides the actual money loss occasioned by these weevils, it is stated that the flour made from wheat much infested by them is injurious to health." Whatever, then, the evils arising from weevilling may be, it is evident that they are aggravated by a system which encourages and even necessitates admixture of dirt, which causes the weevils to "propagate unusually," and thereby renders "the flour injurious to health." For these reasons I agree in the opinion expressed by the Bombay Chamber of Commerce in their letter, dated 14th June 1889, to His Excellency the Governor of Bombay, that the reasons given by the London Corn Trade Association for adhering to the present system are either incorrect in fact or irrelevant, and I am of opinion that no improvement in the purity of Indian wheat will be brought about by grain elevators, threshing machines, or by other means, unless and until that system is changed either by—

Weevil injurious.

Board of Trade's Journal, No. 35, for June 1889, page 687.

Essential reforms.

(1) reducing the standard of refraction to 2 to 3 per cent., which is the normal percentage of admixture of foreign matter; or

(2) by making pure wheat the basis of contract, thus refracting only the actual quantity of foreign matter found on analysis.

It is open to the London Corn Trade Association to adopt either of these courses, and it is difficult to see what the objections to them are, assuming that the exporters and importers do not, as alleged by the Agri-Horticultural Society, derive their profits from the present admixture of dirt.

16. A further question remains for consideration, namely, whether wilful adulteration in this country should be put down by legislation. Mr. John McDougall in a letter, dated 25th March, to the Under-Secretary of State, strongly advised that, failing the adoption of the other measures suggested, it should be made penal to deal in or export grain to be used for human food, in any way adulterated. Mr. Seth Taylor, the President of the London Corn Trade Association, at the conference held in the India Office, remarked on this point as follows:—

We accept your Lordship's disclaimer that you are not going to dictate between the buyer and seller which, I think, would be beyond the scope of our legislature, whatever may be done in other countries; but I think that the limit to which the Government might interfere with advantage would be the prevention of wilful admixture of foreign substances in wheat in India. We must discriminate between what is naturally grown and is necessarily harvested with the wheat, and the system of mixing dirt with the wheat to bring it down to a standard below that which should come here. That, of course, one feels is a practice which might very fairly be made a penal offence. But that rests with your Lordship and the Government. I am quite sure that it would be to the interest of every one if such an enactment could be

passed. The difficulty there is in fixing a limit of 2 per cent. refraction is owing not only to dirt, but to the seeds of various kinds that are grown amongst the wheat. We have not only from India but from other countries foreign elements grown in the wheat, and to have a system of cleaning wheat at the port of shipment would add more to the cost of wheat than the buyer would give on the other side.

Legislation to penalize adulteration.

17. It thus appears that the London Corn Trade Association as represented by their President would be in favour of legislation with a view to stop deliberate adulteration, as such legislation, it is said, would be in the interest of every one. I would not, however, recommend recourse to such legislation. It is evident as long as contracts are made on the basis of 5 per cent. of foreign matter, that if wheat is produced from the threshing-floors with only 2 per cent. of foreign substances, and wilful admixture of foreign matter be not allowed, the gainers would be the merchants at home, for they would secure grain with only 2 per cent. of dirt, when they had contracted and paid for grain with 5 per cent. of dirt, and the losers would be the ryots and petty dealers in India, who would obtain for comparatively pure grain the same price as for wheat with 5 to 7 per cent. of mixture. If, then, legislation is to be had recourse to at all, it should be designed not alone with a view to punish deliberate adulteration, but also with a view to punish trading or dealing in grain which has been adulterated. It cannot be said that the practice of adulterating wheat at present followed is punishable under the Indian Penal Code, for it is not certain that the adulterants are deleterious to human health, inasmuch as it is said that the dirt and adulterants are removed by millers in England before flour is consumed, nor can the practice be considered fraudulent, inasmuch as the purchasers of adulterated wheat contract for and purchase the dirt, and know what they are buying. The persons who to some extent suffer from the present system are the consumers of flour in England who have to pay unnecessarily for cost of five to seven maunds of dirt for every hundred maunds of wheat, then to pay for the extra cost of separating the wheat from the dirt in England, and at the same time obtain for consumption, at a needlessly high rate, flour which must be less wholesome than if it were made from wheat imported in a pure state. But the class which chiefly suffers are the Indian ryots, who are placed by the system in an unfavourable position to compete with foreign markets, and may in time, in consequence of the system, be driven out of the market altogether.

Railway rules as to export consignments.

18. The proposal made by the Chamber of Commerce to allow Railway Companies to raise the limits of special class consignments of wheat and seeds intended for export from the present limit of a wagon load to 50 tons (these special class consignments are carried at specially low rates), is one which cannot, in my opinion, be supported. It is not clear how the adoption of this proposal could affect the cleanliness of wheat, while the proposal is obviously objectionable on other ground as tending to unduly favour large exporters at the expense of the growers and petty dealers. The adoption of the proposal would, it is said, draw a sharp line between wheat intended for export and that intended for local consumption. The latter is now adulterated even more than the former, and consignments originally intended for local consumption, with admixture of 10 to 12 per cent. of dirt, are sometimes bought up by exporters and shipped as they stand, but the same thing would happen supposing the Chamber's proposal to be accepted.

19. To sum up: I am of opinion that the elevators may be tried in fifteen selected stations as proposed, provided the Company make their own arrangements for the purchase and sale of their grain, without the interference of Government officials; that a guarantee of interest at 4 per cent. on a maximum outlay of £25,000 per annum may be given for five years, and free sites for buildings; but I doubt whether the elevators will have any appreciable effect in causing clean grain to be exported from India as long as the present system of 5 to 7 per cent. refraction continues; that this system renders the admixture of dirt and foreign substance up to that standard inevitable; that the reasons given by the London Corn Trade Association for adhering to the present system, so far as Calcutta is concerned, are founded on misapprehension of facts; that their conclusions ought to be reconsidered; that special legislation should not at present be had recourse to; but, if other remedies fail, that it will then be a question for consideration whether, as suggested by Mr. McDougall of London, it should not be made penal to deal in or export wheat, intended for human food, which there is reason to believe has been wilfully adulterated or contains substances deleterious for human consumption.

Summary of recommendations.

43.

Proceedings of a meeting held in Darjeeling on 28th May 1890.

PRESENT:

MR. J. A. RALLI, } *Merchants,*
„ PETROCOCHINO, }
„ PALLACHI, *Broker,*
„ FINUCANE, *Director of Agriculture, Bengal.*

The following questions connected with the subject of erection of grain elevators in India and the impurity of Indian wheat were discussed:—

Questions.—Is the scheme described in Mr. Smith's letter, dated 17th September 1889 (which was read), one which is suitabe for India?

Messrs. Ralli, Petrocochino and Pallachi consider that the system is not suited to India, and, if it were, they think that the concessions and privileges which Mr. Smith asks for are so impracticable that they need not at present be considered *seriatim*. It would be obviously out of the question to provide land for the Company's purposes free of cost in every railway station from which wheat is exported; or to guarantee that similar facilities will not be afforded to a competing Company; or to guarantee interest at 4 per cent. on any amount which the Company may deem it desirable to expend.

2. Apart from the general scheme, is it desirable, as an experiment, to give the facilities asked for to enable the Company "to select a few stations on some of the principal grain-carrying railways, and to conduct thereat simple cleaning and grading operations, returning the grain into bags properly secured, and covered by certificates as to the quantity and quality, thus discarding for the present the idea of the elevator proper"?

2. *Mr. Finucane* said that as Mr. Smith proposes to return the grain to the bags, and to let the owners dispose of it as best they can, the

advantage of the elevators was not apparent. If an adequate price cannot, as is alleged, be now got for clean grain, and if it pays people to have the grain as produced from the threshing-floors mixed with dirt, why should they bring their grain to be cleaned to the elevators? If they did bring grain to be cleaned, why should the fact of its being cleaned in the elevators secure for it an adequate price if, as is asserted, clean grain does not now fetch an adequate price?

Mr. Ralli said people would not bring their grain to the elevators to be cleaned. Wheat can now be cleaned at a very low cost. Machinery was introduced by his own firm for cleaning grain, and grain was cleaned; but it was found that it did not fetch a relatively higher price. It is not clear how the fact of its being cleaned in the elevators could secure an adequate price for it. The process would probably be more expensive than cleaning by native agency with sieves. Therefore the elevators must be financial failures. Messrs. Pallachi and Petrocochino agreed. In this connection Mr. Ralli adds that he understands the Elevator Company will charge on all certificates granted an uniform wastage of a certain percentage, perhaps ½ per cent. per month. This would, in his opinion, be most objectionable, because it would place the man who delivers a parcel of wheat in good condition on the same footing as one who delivers badly weevilled wheat, which will go on deteriorating in weight to a much greater extent than good conditioned parcels. The one man will thus benefit at the expense of the other.

3. How would a plan work of having the owners of the elevators buy and sell the grain at their own risk, i.e., *suppose Mr. Smith's Company were to buy the grain from cultivators, traders or others on the best terms they can, then bundle, clean and export it themselves at their own risk, and thus endeavour to make a market for clean grain at home? Would Government in this case be justified in giving land for the buildings on State Railways, and guaranteeing interest on the outlay on buildings and machinery, as proposed by Mr. Smith, up to a maximum outlay of £25,000 for five years? This would involve a guarantee of only £1,000 a year for five years. If the Company succeeded, they might then be left to extend their operations without Government interference; if they failed, the risk, so far as Government is concerned, would not be great. No monopoly should, of course, be given to them, and no guarantee as against other Companies or firms. Inasmuch as they would be pioneers in trying the experiment of procuring clean grain and obtaining a market for it, might they be encouraged to the extent of giving them free sites for their elevators at the selected railway stations where they propose to begin their operations, and might they be guaranteed 4 per cent. interest on an outlay on buildings and machinery up to a maximum outlay of £25,000 for five years, being, after that term, left to work on purely commercial principles?*

4. Messrs. Anderson, Wright & Co. say that the grain elevator system is unsuited to India, and urge that there is no justification for the acknowledgment in Court of a contract for wheat with 5 per cent. or 10 per cent. adulteration. Up-country firms, both native and European, would, they say, gladly see a market for clean grain forced upon exporters. This can be accomplished by Government enacting, both here and in England, *that no contract will be recognised in a court of law unless based on a price for pure wheat. Were this the case, no up-country dealer*

would risk paying railway carriage on 5 tons of dirt for every 95 tons of pure wheat, and no buyer would accept of wheat without getting the full equivalent of the loss he would sustain on the refraction by sending parcels to Europe.

The Agri-Horticultural Society urge the same view, and say "there is a well established custom of deliberate adulteration, that a regular market price for suitable adulterants exists in the exporting districts, and that sellers purchase these materials and mix them with their wheat. The shippers make the best bargain they can as to allowances (for dirt) with the sellers, and sell fair average at home. Practically their profit depends on what they get in this way."

Queries.

(a) *What would be the objections to such an enactment as Messrs. Anderson, Wright & Co., and the Agri-Horticultural Society propose?*

(b) *Are these objections outweighed by the advantages to the trade and public which would be attained?*

(c) *Is it true that the profits of exporters practically depend on adulteration?*

5. *Will the alterations made as to forming the standards in which deliveries will be compared in case of need by the London Corn Trade Association have any effect in causing cleaner grain to be exported than heretofore?*

6. *As the elevator system is not believed to be likely to afford a remedy, and as the London Corn Trade Association have done practically nothing, and as legislation is not approved, then nothing can be done in order to secure export of clean grain.*

The Calcutta Chamber of Commerce have urged on Government the desirability of impressing on cultivators the neceseity of producing clean grain. It has been shown that it would, under present conditions, be wrong to impress anything of the kind on cultivators, and that nothing can be done in that direction towards securing export of clean grain. Is nothing then to be done in any direction?

Can wheat be sold onanalysis?

Is it sold anywhere on analysis?

7. *How would the recommendation of the Bengal Chamber of Commerce operate towards securing exports of cleaner grain?*

Their recommendation is that Government should permit railways to raise the limits for special class consignments of wheat and seeds intended for export from the present limit of a wagon-load to a minimum load of 50 tons.

8. *Where there is a deliberate adulteration of wheat going on in the manner described by the Agri.-Horticultural Society, should it be stopped by police interference under the Penal Code, if that be possible, and if not possible under the Penal Code, should an Act be passed to make the practice penal?*

3. *Mr. Pallachi* thinks that this plan is worth a trial, provided that no monoply is given in any shape. If the Company believe in the efficacy of their elevators in reducing the cost of turning out clean grain, and if they believe that they can get an adequate price for clean wheat,

they should be prepared to try the experiment on these terms. But Mr. Pallachi himself thinks the elevators will be financial failures, because the increase of cost of cleaning the grain will be more than the increase in price which will be obtained for the cleaned grain at home.

Mr. Ralli does not think that Government would be justified in offering any guarantee, because he thinks the scheme has no chance of success. He would not himself invest a pice in elevators on this or any other plan. Mr. Petrocochino agreed with Mr. Ralli.

Mr. Ralli adds that basing oneself on the experience of firms long established, the necessary staff and organization for carrying out such a scheme would be so costly as to prejudice any reasonable chance of success. It would be tantamount to constituting the Grain Elevator Company into a mercantile concern to which one season's unfavourable experiment would be disastrous, especially with so limited a capital.

4. *Mr. Ralli* says the objections to such an enactment are the following :—

1st.—The general objection to Government interference in trade.

2nd.—Such an enactment would result in an evasion of the letter of the contract. The Calcutta merchants would have no objection to such an Act if the home merchants have none. The Calcutta merchants are the servants of the home consumers. It is because the home markets pay relatively better prices for unclean wheat that shippers find it better to export it.

It is not because of difficulty in procuring clean grain that it is not exported, but it is because there is a better demand for dirty wheat that dirty wheat is exported. Mr. Pallachi entirely agrees in this view; so does Mr. Petrocochino. The statement is not correct that the profits of the shippers depend on the system of refraction, the home buyer pays a price knowing what he has to get. In case of excess admixture the shipper is mulcted in heavy allowances.

With reference to the statement in No. 4, Anderson, Wright & Co., to the effect " that no up-country dealer would risk paying railway carriage on 5 to 10 per cent. of dirt, Mr. Ralli remarks that sellers send down seeds ordinarily containing a greater amount of admixture than the one contracted for. Although, for instance, a contract of linseed stipulates that in the event of the admixture exceeding a certain percentage buyers (besides several other options have also that of rejection), it has been found impracticable to enforce it.

5. *Mr. Ralli* says the alteration made is one in the right direction, and will probably check any tendency for future increase in the admixture of wheat shipped from India. Messrs. Pallachi and Petrocochino agree.

6. *Mr. Ralli* says the only remedy is to be found in the consumer in England paying an enhanced price for a superior article. If he does the article can be supplied. He believes that relatively pure wheat can be supplied from India. It is a question of price. As to the question of selling on analysis, wheat in Marseilles is sold, he believes, only by his firm (Ralli Brothers) on the basis of analysis, *i.e.*, fixing a percentage of the components. Usually any differences arising in the deli-

veries in Marseilles as to analysis are judged by the eye, but of course the buyer has the right of proceeding to analysis. The basis of admixture on which his firm sells guides the general deliveries of Indian wheat in Marseilles. This change, however, has not, he believes, increased the imports of Indian wheat into Marseilles.

As to the basis of selling on analysis in other countries, he supposes the same might be done in England if buyers are prepared to pay the difference of price, which is very doubtful; but of course it will enhance the cost.

Mr. Petrocochino agrees with Mr. Ralli.

Mr. Pallachi says that, so far as he can judge, there are no difficulties so far as weevilling is concerned, in selling by analysis. It is done in Marseilles; why not elsewhere?

7. *Mr. Ralli* says that there would be greater uniformity, as the tendency would be to throw the export trade from the districts into the hands of larger dealers.

Mr. Pallachi says the adoption of the recommendation of the Chamber would have no effect whatever in the direction of securing export of clean grain, and would be injurious to the interests of petty dealers.

Mr. Finucane said it would also appear to be injurious to cultivators, as throwing additional obstacles in the way of sale and export of small quantities of grain.

8. This is a question of law on which it is preferred not to express an opinion.

The 28th May 1890.

M. FINUCANE,
Director, Department of Land Records and Agriculture, Bengal.

44.

From Bengal Chamber of Commerce, to Director, Department of Land Records and Agriculture, Bengal,—No. 386—90, dated 7th May 1890.

The Committee of the Chamber of Commerce have given their best attention to the papers forwarded with your docket No. 463 Agri., dated 4th March, and I am now directed in reply to state that in their opinion any attempt to introduce the grain elevator system into this country would be at least premature. Mr. James G. Smith, in his letter to the Secretary of State, dated 17th September 1889, after enumerating the benefits that would result from the system, and pointing out the directions in which the assistance of Government would be necessary, suggests a tentative commencement of operations by the "Grain Clearing and Elevator Company," pending which the efforts of the promoters would be directed to securing a demand for the clean and graded wheat.

The result of the agitation of last year in favour of clean Indian wheat does not encourage the Committee in the belief that the efforts alluded to by Mr. Smith would meet with any great amount of success. But should a real demand arise for clean Indian wheat, they are of

No opening for elevator under present conditions.

opinion that private enterprise will be equal to the occasion, without requiring either the assistance of, or a guarantee from, Government.

It is not necessary to discuss the suitability of the elevator system to the conditions of the grain trade, at least on two sides of India, further than to say it is open to doubt whether, considering the heavy expenses which the proposed Company would incur, such a Company could successfully compete with the simple, but effective, methods of cleaning already known to those who deal in grain. The Committee, moreover, consider that the proposal that the Company should hold grain for the owner for an indefinite time, and accept the responsibility for its condition, is scarcely one suited to India owing to the risks attending keeping wheat in this country for any length of time.

The Committee would point out that the scheme contemplates concentrating the grain trade at a few important stations on the principal wheat-bearing railways, and to this extent is diametrically opposed to the policy pursued for the last eight or ten years by Government—a policy which, by abolishing the special reduced rates, allowed by the Railway Administration for large consignments, aimed at giving petty stations equal facilities with the larger depôts for sending produce to the coast ports. The Committee understand from the principal exporters of wheat that the opening up of these petty stations is largely responsible for the deterioration in the cleanness of the wheat brought to this port, for whereas this produce was formerly concentrated at some few important stations, there piled and re-bagged, it is now forwarded direct, without any piling, handling, or cleaning, to the coast port. While the Committee are of opinion that it is now impossible to nullify the results of this policy and revert to the old system of special rates for consignments of 200 tons, they would urge most strongly upon Government the necessity of permitting the railways to raise the limit for special class consignments of wheat and seeds intended for export, from the present limit of a wagon-load to a minimum load of 50 tons.

Special class consignments.

This will have the effect of making a broad line between wheat tended for export and that for local consumption.

It would assist in raising the standard of cleanliness.

It would place the trade in the hands of men of some little means, instead of opening it up, as at present, to impecunious gamblers.

It would lessen the work needful to be done at the shipping port and permit of the grain being properly sampled and examined, and so put a check to the false packing and swindling, which is encouraged by the system of petty consignments.

The Committee have reason to believe that if this slight reform were introduced, the benefit resulting to the trade would be so great as to leave little to be desired in the condition in which rail-borne wheat would reach the home market.

45.

Calcutta Wheat and Seed Trade Association, to Bengal Chamber of Commerce, No. 41 II., dated 6th June 1890.

Legislation undesirable.

M. Mr. Finucane's letter of the 28th ultimo to your address, with its annexures, regarding a proposal that the only basis of sale of wheat

which should be recognised by law should be that of pure wheat, was duly considered by the Committee of the Association at their meeting held yesterday, when I was desired to let you know, for the information of Mr. Finucane, that in the opinion of the Committee it is useless to try to compel people to clean wheat as long as the Home Trade is indifferent about it, and is satisfied with what it now receives. The Committee further consider that there is no need for legislation on this subject, and they regard the enactment of a law on the terms proposed as a most undesirable interference with freedom of contract.

As regards Mr. Finucane's enquiry with reference to the other proposal, that the limit for special class consignments of wheat intended for export should be raised by the railways from the present limit of a wagon-load to a minimum of 50 tons, the Committee do not think it necessary to express any opinion, as this point will no doubt be dealt with by the Chamber from whom the proposal emanated.

I return the papers herewith.

46.

Agri-Horticultural Society of India, to Director, Department of Land Records and Agriculture, Bengal, dated 3rd April 1890.

I have the honour to acknowledge receipt of your endorsement No. 464, dated the 4th ultimo, forwarding, for the expression of this Society's opinion, correspondence accompanying Revenue Department endorsement No. 516—63 Agri., dated 11th February 1890, in connection with establishing grain elevators in India.

2. I am to say that as this Society understands that the different Chambers of Commerce have been consulted, and as the views of the commercial community will thus be laid before Government, the Society deals with the question wholly in its relation to the cultivators.

3. The establishment of the elevators for the purpose of cleaning grain for export is, the Society consider, not likely to be of any direct benefit to the grower, for the reasons set forth in the following paragraphs.

Reasons against the scheme.

4. The conditions under which wheat is grown in India, the small quantities each grower places on the market, the poverty of the people necessitating their selling their produce without delay, and other causes, precludes there being any chance of their being able to avail themselves of the facilities for cleaning offered by the system.

As a rule Indian wheat is not purposely adulterated by the growers. The impurities which exist in it when it leaves their hands are due to the system of cultivation and thrashing, which are too well known to need description here.

The growers winnow and clean their wheat to the extent their crude appliances will admit, and undoubtedly some of the earth from the threshing-floor, and an admixture of other grains, must remain in the crop. This is estimated at 2 to 3 per cent. of earth, peas and barley. But as the Calcutta contract is for 5 per cent. up to August, and 6 to 7 per cent. after that, it therefore pays the seller to adulterate his batch up to 2 per cent. over the guarantee, or he will lose on the average.

This is such a well-established custom that a regular market price for suitable adulterants exists in the exporting districts, and the seller purchases such materials and mixes it with his wheat. The shipper has the lot examined and makes the best bargain he can as to allowance with the seller, and sells 'fair average' at home: practically his profit is what he gets in this way.

It is probable that even the buyers who collect grain, buying the small quantities sold by individual growers at *hâts* and bazars, and selling again to dealers' and merchants' agents, are not likely to be able to deal directly with exporters through the elevators.

Loss to cultivator.

4. There is one feature in what is known as the Elevator System which would probably affect the grower prejudicially.

The system is that all grain passing into the elevator is graded and bulked, and a receipt given to each constituent, who, when he requires his grain, receives his quantity from the bulk.

The bulking of such large quantities gives a more even standard than at present exists in India, and these recognised standards again being fixed, their relative prices are fixed.

As a matter of practical convenience, the number of standards or grades will have to be limited, and the present elasticity done away with, so that a superior sample falling into a given class will fetch no more than an inferior sample which is just good enough to pass the standard.

There will therefore be no incentive to buy the best quality of a certain class; the endeavour will be to get the cheapest grain which will pass the standard. This may not matter to the merchant, but the grower who produces a better sample of grain of the same class as his neighbour's will be no gainer.

5. I am directed to say that, for the reason already given, this Society does not enter into the question of the effect which the introduction of elevators would have on the trade in wheat. The Society is aware that there is much to be said from a commercial point of view for the establishment of fixed grades of clean wheat, and for other results of the elevator system. Without offering an opinion on these points, or on the system as a whole, I am to point out that in India the existence of the weevil pest would have to be taken into consideration as a factor against the collection and storing of grain in the manner proposed, and special means would have to be contrived to guard against its ravages, more especially were wheat held over for any time.

Danger of weevilling increased.

The Society is aware that the papers before them contain merely an outline of the scheme proposed. They think, however, that there being no allusion to one of the greatest evils with which Indian wheat has to contend is a serious omission.

6. I am to submit that, if the object of the Government in entertaining the scheme under consideration is to put a stop to the intentional adulteration of wheat in India, a simple remedy exists, *viz.*, to enact that no contract for purchase or sale of wheat will be considered valid unless the price agreed upon is held to be for pure grain. As long as sellers can go into Court and enforce a contract for wheat with 5 per cent to 10 per cent. adulteration, the evil cannot be stopped. If the price paid was for pure wheat only, no one would expend money on the

Legislation for adulteration.

railway carriage of adulterants which would be deducted from the price, and no exporter would pay freight and charges unless he got from the seller the full equivalent of what he would lose for any adulterations.

47.

Agri-Horticultural Society of India, to Director, Department of Land Records and Agriculture, Bengal, dated 5th June 1890.

I received your demi-official No. 173, dated the 29th ultimo, on the 2nd instant, and though it was marked urgent, I have had to delay replying a couple of days to collect the samples sent herewith.

You ask (1) the value of adulterants, (2) the districts where they trade in them, (3) if they are of such a nature as to be deleterious for human consumption, (4) whether in the opinion of this Society the deliberate adulteration of wheat, if not already penal, should be made so. And nature value, etc. of adulterants.

(1) The value of adulterants vary: those which are not added intentionally, such as gram and oil-seeds, having a distinct value, in some cases exceeding that of wheat; these, with a small percentage of earth and chaff, compose what may be called the natural adulteration. The adulterants which are added purposely include most of the foregoing taken from the general threshing-floor, and other refuse, small bits of brick, cow-dung, and a large proportion of earth. The adulteration thus consists of putting back into the grain a given quantity of what has previously been removed, so as to degrade it to the low standard.

In Calcutta, where there are no threshing-floors, the refuse, fannings and screenings from merchants' godowns and millers' works, are bought by regular dealers whose head-quarters are at Hatibagan. They hand-clean and divide out the gram, oil-seeds, etc., into the quantities sent herewith. The bulk remaining consists of light and weevilled wheat, earth and a proportion of oil-seeds. This is sold as pigeons' food, and is the basis of such adulterants as are added in Calcutta. There is comparatively little done in this way here, as the wheat with the given percentage of refraction comes down from the districts. The price of this material is from 12 annas to ₹1-2 per maund according to quality, and to it is added the earth which has been separated. These samples are marked B 1, 2 and 3, and E.

The gram and chaff is brought by carters to feed their bullocks, by grain parchers, etc., and the oil-seed is readily sold. This brings us to the (3) question as to whether the adulterants are deleterious. The proportion of foreign matter of every sort not being 8 per cent. in extreme cases, there does not seem much danger, particularly when it is considered that the grain is professedly dirty, and that it is cleaned before being prepared for human food.

(4) As your letter is urgent, and the members of the Committee who would deal with such a reference as yours are absent from Calcutta, I cannot reply to the question of penalising deliberate adulteration. Should you desire it, I can write you on this point hereafter. I believe my Committee think that the remedy suggested in the 6th paragraph of my official letter to you would be quite sufficient, but, for the reasons given, I have not been able to again consult them on this point.

And samples of impurity.

In addition to the samples I send, got from Hatibagan, and lettered according to the enclosed list, I send a collection of twelve samples kindly given to me by Mr. W. W. Duncan. They are from the firm's flour-mill, which has the best machinery for cleaning and sorting grain, as well as for milling, on this side of India. The samples are drawn this morning from the separator, and you will observe that some of the foreign matter could have easily been cleaned out in the exporting district. I have not seen such a collection elsewhere, and think that you will find them of interest.

P. S.—Since writing the foregoing, I have obtained the following additional samples :—

G.—The sweepings collected by the dealers, with the dust taken out. This sample contains wheat of bad quality, oil-seeds, etc. The price in this condition is ₹1-12 per maund to ₹2.

H.—The dust taken out of the above sample, ₹9 per cart.

I.—A sample prepared for adulterating wheat, called technically *hatka*.

No 1. Uncleaned wheat.
„ 2. Refuse from fan-valve of separator before going on to sieve.
„ 3. Fannings from first sieve of separator.
„ 4. Grain from second sieve of wheat separator.
„ 5. Screenings from third sieve of wheat separator.
„ 6. Fourth sieve of wheat separator.
„ 7. Refuse from fan-valve of separator after passing through the sieves.
„ 8. Screenings from Cockle cylinder.
„ 9. Refuse from first valve of smutter.
„ 10. Refuse from second valve of smutter.
„ 11. Fan-valve of brush machine.
„ 12. Clean wheat.

SAMPLES FROM HATIBAGAN.

A. Grain and barley, price at ₹1-8 per maund.
B¹. B². B³. Light and shrivelled grains of wheat, oil-seeds and earth, at ₹1-2 per maund.
C. Oil-seeds at ₹1-8 per maund.
D. „ „ 1-4 „
E. Earth „ 0-8 „ or ₹10 per cart-load.
F. A sample prepared to show the sweepings purchased, none remaining uncleaned.

48.

Chairman, Calcutta Port Commissioners, to Director, Department of Land Records and Agriculture, Bengal, No. 318, dated 6th May 1890.

I have the honour to acknowledge the receipt of your endorsement No. 463—71 Agri., dated the 4th March 1890, forwarding, for an expression of the Commissioners' opinion, copy of correspondence which has passed between the Government of India and the Secretary of State on the subject of the formation of a Company for the introduction of grain elevators into India.

2. In reply, I beg to state that the papers were carefully considered by the Commissioners at a meeting held on the 30th April 1890, and, in pursuance of a resolution then passed, I have to state that the Commissioners are of opinion that the scheme contemplated is not one which is suited to this country, or one which should have the support of Government of the kind asked for. It, however, seems to them that if the requirements of trade necessitated the introduction of such a system and there was a prospect of its proving remunerative, it would be taken up by private enterprise. Scheme unsuitable.

49.

Manager, Eastern Bengal State Railway, to the Director, Department of Land Records and Agriculture, Bengal, No. 839M., dated 26th April 1890.

In reply to your letter No. 469 Agri., dated 4th March 1890, I have the honour to make the following remarks regarding the proposed Company for the introduction of grain elevators in India. Concession exorbitant.

2. As regards this railway, the traffic in wheat and seeds is small, and it is unlikely that an elevator would be required at any of our up-country stations. If, however, it should hereafter at any time be considered expedient to erect one, we have no employé at such stations who would be qualified to issue certificates of quality.

3. It is, I think, doubtful if higher railway freights would be obtained for wheat dealt with in elevators; the consignor would consider that he paid the Elevator Company the cost of handling his grain, and would probably call for a corresponding reduction in the rates. The railway would effect no practical saving in being relieved of the cost of receiving and watching the grain.

4. The free grant of land at metropolitan stations and Port Trust property is a very large concession, but the demands of the promoters appear to me to be generally so exorbitant that this point does not perhaps call for special remark. If they have any real belief in the effects to be produced from the introduction of the elevators on which so much stress is laid on page 2 of the printed papers, they should be assured of the success of the project on its own merits without calling on Government to guarantee interest and to grant free land.

5. The venture is of course a novel one in this country, and if the promoters were prepared to erect elevators on one railway and at one port, they might reasonably be given a monopoly for 25 years and land free of rent until such time as the undertaking paid over a certain percentage, when arrears could be made good. But as regards the proposals for cleaning, grading and storing wheat without incurring expenditure on elevators, it seems to me that if such a course could be commercially undertaken at a profit, it would have been introduced long ago without any Company or guarantee.

6. In conclusion, I may add that I have no practical acquaintance with the details of dealing with grain on the elevator system as worked in America or elsewhere, and I therefore give my opinion on the subject with some diffidence.

50.

Officiating Manager and Engineer-in-Chief, Tirhoot State Railway, to the Director of Land Records and Agriculture, Bengal, No. 2507, dated 19th April 1890.

In reply to your endorsement No. 470 Agri., dated 4th ultimo, I have the honour to state that I am strongly in favour of the scheme of having elevators at large and important stations, but I doubt very much their giving any return on the capital outlay on a line like the Tirhoot State Railway, where the stations are situated so closely together.

Success of scheme problematical.

I should oppose the railway staff having anything to do with the working of the elevators from a mercantile point of view, such as sampling, etc., etc. The railway might give lands and sidings, but I should be opposed to giving any guarantee or granting a monopoly to any one firm or company.

51.

Manager, Nalhati State Railway, to the Director of the Department of Land Records and Agriculture, Bengal, No. 1812, dated Nalhati, 3rd May 1890.

With reference to your No. 471 Agri. of 4th March 1890, regarding the introduction of grain elevators in India, I have the honour to state that I am of opinion that the scheme is one which deserves encouragement and support from Government.

52.

Agent, East Indian Railway Company, to the Director of the Department of Land Records and Agriculture, Bengal, No. 5862, dated 14th May 1890.

With reference to your docket No. 468 A., dated the 4th March last, regarding the introduction of grain elevators in India, I am of opinion that until they are introduced the purity of Indian wheat and seeds for export cannot be guaranteed. At the same time I beg to point out that, until a proper understanding is arrived at between seller and buyer, it would be useless to attempt to introduce them.

Proposal deserves encouragement.

Doubtless in course of time a better and purer description of wheat will lead to a larger demand, and the country would benefit by increased exports.

On the whole, I am in favour of the introduction of elevators, but I would deprecate any attempts to create a monopoly in favour of any port or railway in India.

53.

Traffic Manager, East Indian Railway, to Acting Agent, East Indian Railway, No. 2937, dated 25th June 1890.

The question does not appear to have been quite clearly stated in the letter from the Chamber of Commerce. We have not abolished the

special reduced rates formerly only given for large consignments, but we have removed the condition that the lowest rate shall be subject to a minimum of a train-load or other large quantity. Our charge for wheat and seeds in wagon-loads is now lower than the specially reduced rates formerly quoted for large consignments. Rule as to minimum weight for produce.

The train-load minimum was withdrawn fourteen years ago under instructions from the Board of Directors, and I cannot find that since then there has been any desire to re-introduce it, or any other minimum which would be likely to affect traffic from the small stations which we have opened from time to time.

At present, owing to the tonnage of our wagons, it would be to our detriment to introduce a minimum of 50 tons (irrespective of other considerations). Of 50 tons say 46 could be loaded in four wagons, and the fifth must be reserved entirely for the remaining four tons to prevent confusion with mixed consignment, etc.

Enclosure returned.

54.

Messrs. Ralli Brothers, to the Director, Department of Land Records and Agriculture, Bengal, dated 12th March 1890.

We beg to acknowledge receipt of your letter, dated 3rd March, requesting our opinion regarding the introduction of grain elevators into India. Success of scheme doubted

We have carefully perused the documents attached to this letter, and regret to inform you that, as we have no experience of the working of elevators in America, we are not in a position to express a decided opinion on the subject further than to say in a general way that, viewing the distinct nature and diversity of quality of the Indian grain compared with American, we very much question whether the introduction of any such system in the handling of Indian grain would be successful.

55.

Messrs. William Moran & Co., to the Director, Department of Land Records and Agriculture, Bengal, dated 7th May 1890.

We have to acknowledge your letter No. 1060 of yesterday's date, forwarding the papers relative to the introduction of grain elevators into India.

We have given the papers very careful consideration, and are of opinion that the measure is one worthy of support and encouragement.

56.

Messrs. Anderson, Wright & Co., to the Director, Department of Land Records and Agriculture, Bengal, dated 12th March 1890.

In reply to your favour of 3rd instant, *anent* Messrs. Ritchie, Steuart & Co.'s scheme for the introduction of grain elevators. Elevator's unsuitable.

The application of the American system to India is, in our opinion, not what is wanted. Indian wheat is all shipped in bags, whilst American

goes to a large extent in bulk, and the elevator is of no use where the bagged article is the rule.

This Messrs. Ritchie, Steuart & Co. really concede, when they come down to proposing to open at a few stations and "conduct thereat simple cleaning and grading operations, returning the grain into bags properly secured."

Legislation advocated.

We think most firms having up-country connections have tried this, but home-buyers and brokers are too powerful, and will not allow settlement to be made based upon the clean wheat. With an ordinary graded netting and a few coolies 100 tons daily can be turned out in any godown at a nominal expense without Government guarantee, and up-country firms, both native and European, would gladly see a market for clean wheat forced on exporters. This can be accomplished by Government enacting, both here and in England, that no contracts will be recognised in a Court of law unless based on a price for the pure wheat. We have pointed out again that there is no justification for the acknowledgment in Court of a contract for wheat with 5 per cent. or 10 per cent. adulteration. The only basis of sale recognised by law should be that of pure wheat, and were this the case, no up-country dealer would risk paying railway carriage on 5 tons of dirt for every 95 tons of pure wheat, and no buyer would accept of wheat without getting the full equivalent of the loss he would sustain on the refraction by sending the parcel forward to Europe. As long as the law recognises contracts for adulterated wheat, so long will the trade in it continue.

57.

Messrs. Balmer, Lawrie & Co., to the Director, Department of Land Records and Agriculture, Bengal, dated 7th May 1890.

In reply to yours of 2nd instant, we think the proposed alteration deserving of the support of Government, as from the correspondence we gather that it will benefit the wheat industry.

We shall be glad to know whether we can be of any assistance to the proposed Company in Calcutta.

58.

From Government, North-Western Provinces and Oudh, to Government of India, No. 149—1-590 A., dated 6th June 1890.

I am directed to acknowledge the receipt of your communications noted on the margin, forwarding certain papers connected with the formation of a Company for the introduction of grain elevators into India, and asking for the views of this Government as to the encouragement that should be extended to the Company.

No. 122-127C.—Agri., dated 6th January 1890.
No. 223 C., dated 31st January 1890.

2. In reply, I am to state, for the information of the Government of India, that the papers were forwarded for opinion to the Director of Land Records and Agriculture, North-Western Provinces and Oudh, and to the Chamber of Commerce for Upper India, Cawnpore. Their replies* accompany this letter.

* From Director of Land Records and Agriculture, No. 1432, dated 5th April 1890.
From Secretary to the Upper India Chamber of Commerce, dated 15th April 1890.

3. From the papers accompanying your letter it appears that the Company do not at present propose to introduce into India the grain elevator system on the scale on which it exists in America. They propose to restrict their operations to a few towns on important lines of railway and to there conduct simple cleaning and grading operations, returning the grain into bags properly secured and covered by certificates as to quality and quantity. The Lieutenant-Governor agrees with the opinion expressed by the Director of Land Records and Agriculture, that all that the Company thus propose to do for the ryot of India the ryot is well able to do for himself. The cultivator of the provinces thoroughly understands the cleaning of wheat, and as with him labour is cheap, there would be no inducement for him to take his grain to the elevators. The first thing to be done is to establish the demand for clean grain which the present conditions of the wheat trade have not yet introduced, and this the Company can best do by establishing their elevators at the ports and not in the interior. If the Company erect their elevators at inland towns, it will not be sufficient for them to clean the grain ; they will be compelled to undertake, as grain merchants, the carriage of cleaned grain to the ports. Elevators unnecessary up-country.

4. The Lieutenant-Governor considers it would be inexpedient to extend special privileges to a Company which would enable it to monopolise the export grain trade of the country.

59.

From Director of Land Records and Agriculture, North-Western Provinces and Oudh, to Government, North-Western Provinces and Oudh, No. 1432, dated 15th April 1890.

I have the honour to reply to General Order No. 117—1-590A., dated 20th January 1890, asking my opinion on the proposed formation of a Company to introduce grain elevators into India.

2. I have discussed the subject with European and Native traders, and I have also had the advantage of consulting the Traffic Superintendent of the Metre Gauge Section of the Bombay, Baroda and Central India Railway, who arranged a meeting with me at Agra and was able to give me valuable information as to the existing conditions of the wheat trade on his railway.

3. I need not dwell upon the obvious advantages which would result to India if Indian wheats could be placed on the English market in better condition than is now the case. It has, however, been proved, beyond doubt, that the main hindrance to improvement is not the Indian cultivator, but his European customers. If the London and Liverpool Corn Associations would insist on a higher standard in contracts for

Indian wheat or would alter the practice by which deductions can be claimed by the buyer on account of the alleged existence of impurities, the Indian cultivator would improve the character of his wheat. Labour is cheap with him and grain-cleaning is well understood in his household. It is because the local dealers will not give him a higher price for clean wheat that he takes no trouble to clean it and even resorts to the device of loading it with dirt. What the Grain-Cleaning and Elevating Company propose to do for the ryot's grain the ryot can himself do, provided the conditions of the export market remain unaltered. No ryot and no local dealer will be at the expense of taking grain to the Company's premises and receiving it back again in a cleaned state, unless there is a remunerative demand for this special class of grain. No ryot or local dealer could get a higher price for his cleaned grain received back by him from the Company, because his customers would have no guarantee that after it had been bagged and certified the seller may not have adulterated it. It follows that if the Company is to do any business at all, it must from the outset undertake the handling and transport of grain from the local markets to at least the port of export, and must further be in a position to create a special market in England or in Calcutta and Bombay for the certified product. The half measures to which the promoters suggest that operations should be confined* at first will not answer, as it is impossible to "secure a bag" or to satisfactorily cover it, by a certificate if this bag is to be returned to the local dealer. The promoters must from the first not only clean grain, but arrange for its despatch by rail direct either in bags or in closed wagons from their premises to the shipping port.

Ryot can produce clean grain for better prices.

Company must purchase and export, not merely clean the grain.

* "We would propose to select a few stations on some of the principal grain-carrying railways, and to conduct there simple cleaning and grading operations, returning the grain into bags properly secured and covered by certificates as to the quantity and quality, thus discarding the idea of the grain elevator proper."

Government certificates.

4. I pass to the terms which the promoters ask for from Government in Messrs. Ritchie, Stewart & Co.'s letter of the 17th September. On the second page of the printed papers they ask for the assistance of Government under five heads, and following this they ask for "rights" or concessions under nine heads. The first form of assistance sought is that the grain certificates should be signed by Government officials. I do not think this can be granted. No Government official has time for this work in addition to his own duties, nor does any Government official know the details of the grain-classing business. Even if Government were to agree to appoint and pay the salaries of special officers, who is to look after them?

Temptations to dishonesty would be frequent, and it would not be to the ultimate credit of the State to have anything to do with these grain certificates unless it be prepared to go to great expense in securing adequate supervision. The most under this head that could be offered is that the premises should be inspected by an officer of the Provincial Service at frequent intervals and his report made public. The report however would not carry any Government guarantee.

Free land for sites.

5. Free land for sites could in most cases be found within the Railway Companies' fences, and probably the Companies would not object to surrender land within reasonable limits free of cost if the Government of India wish this and convey some assurance that the case will not form

a precedent for similar demands on behalf of other Companies. A Railway Company would no doubt be inclined to consider each case on its merits, especially with reference to the possible destination of the grain. The North-Western Railway, for instance, would object to give land at Ghaziabad for an elevator if all the grain cleaned in it was likely to go to Calcutta by the East Indian Railway. In some towns land might be acquired by Government near a railway at not excessive cost. It is questionable, however, whether in default of amicable agreement resort could be had to the Land Acquisition Act.

Guarantee against other Companies.

6. The guarantee might be limited somewhat as follows: the Railway Company or Government or both to agree that it would not give or lease land to another grain Elevator Company or afford to such Company special loading or unloading facilities within a term of ten years in or near any town situate on the particular railway in which the present promoters construct a grain elevator of suitable capacity and suitably equipped. If an elevator is considered by the Railway to be needed at any place on the line where the Elevator Company has not put one, the Elevator Company should be given the option of putting an elevator there before land or facilities are given to another Company. This guarantee would not prevent other persons from acquiring land privately, and building elevators for themselves without the assistance of Government or the Railway. I presume a guarantee of this kind could be legally given by an Indian Railway with the consent of the Government of India, although it involves some apparent departure from the principle that a Railway acts strictly as a public carrier and is bound not to give preferential facilities to one person over another.

Guarantee to extend to every Indian Railway.

7. As to the fourth head of assistance the Company might be allowed to make its terms with each railway separately.

Interest guarantee.

8. This might be conceded for a limited term of years and on a limited capital outlay.

9. I now come to "rights." These so-called rights are really of the nature of restrictions on the right which the promoters by law would have to trade and levy charges. In return for free land and certain guarantees the promoters would bind themselves to trade in particular ways only and to limit their charges. As my idea is not to give the Company a monopoly of grain-cleaning trade or connect it closely with Government but merely to help it at the outset with free land, a limited guarantee for interest and the like, I should not be disposed to impose conditions as to charges or on the character of its business. If its charges are high, its cleaning sheds will not be used; or if they are used in spite of high charges other persons will build similar cleaning sheds on private land near the railway station. The promoters, if they are well advised, will not "advance money to ryots on the security of their lands or crops."

10. The general feeling of Europeans and natives engaged in the grain trade is that the promoters should not acquire an exclusive legal privilege of erecting cleaning houses or elevators in any town or place in India. Subject to this consideration it is thought that Government or the Railway Companies might reasonably assist the promoters by free grants of land, transport facilities and the like. I agree with this view and have made my suggestions in accordance with it.

11. Of the three Railways to which the promoters would at first confine operations, the Bombay, Baroda and Central India Railway alone concerns these Provinces. On that Railway, Sirsa, Delhi and Hathras would be the places at which elevators could be established with the best prospect of success. At Agra there is no wheat trade. On the North-Western Railway, Meerut would be an excellent place.

60.

Upper India Chamber of Commerce, Cawnpore, to Government, North-Western Provinces and Oudh, dated C., 25th April 1890.

I am directed by the Committee to acknowledge receipt of your letter No. 116—1-590-A., dated the 20th January, and to express their regret at the delay that has occurred in replying to the same. This, however, I am to say, has been unavoidable owing to the many important considerations and interests involved in the question.

Scheme deserves support.

2. The proposed scheme has been laid before various leading grain-dealers, European and native, and they as a body appear to be of opinion that the establishment of elevators and cleaning depôts at the ports would be of advantage to the country, as the result should be to increase the European demand by improving the quality and so give direct encouragment to the production of wheat in India. The elimination of freight and charges on dirt, of which 52,000 tons were shipped during the last official year, would alone substantially benefit the producer, even supposing that the higher price obtained for purer grain would do no more than cover the cost of cleaning it.

No monopoly.

3. Strenuous objections, however, are urged against granting a monopoly such as the proposed Company seek to acquire from Government. The Committee, therefore, on behalf of the interests which they represent, beg respectfully to protest against any proposals in this direction being entertained which would eventually tend to place the entire control of the wheat trade in the hands of a State Guaranteed Association.

61.

Government, Punjab, to Government of India, No. 59, dated 24th March 1890.

In reply to your letter No. 122 of 6th January last, forwarding for consideration certain papers relating to the formation of a Company for the introduction of grain elevators into India and the issue of certificates of the quality of grain, I am directed to forward, for the information of the Government of India, a copy of the papers noted on the margin, and to say that the Lieutenant-Governor does not think that he can offer any opinion upon the subject until the concessions which the Company seek are much more clearly defined. It would obviously be impossible for Government to give any assistance to a trading firm in regard to many of the so-called rights which the promoters wish conceded to them.

Letter of Director of Land Records, Punjab, No. 292 of 26th February, and enclosures.

62.

Director, Department of Land Records and Agriculture, to Government, Punjab, No. 292, dated 26th February 1890.

In reply to your letter No. 11, dated 20th January 1890, forwarding Circular No. $\frac{122-127\text{-C.}}{\text{Agriculture}}$, from Mr. Muir-Mackenzie, Under-Secretary to Government of India, I have the honour to forward copies of opinions received from the officers noted in the margin.

Commissioner and Superintendent, Lahore Division.
Commissioner and Superintendent, Delhi Division.
Commissioner and Superintendent, Derajat Division.
Deputy Commissioner of Lahore.
Deputy Commissioner of Rawalpindi.
Secretary to the Amritsar Municipality.

The officers in question have all replied very briefly with the exception of Mr. Nicholl, Secretary to the Amritsar Municipal Committee, whose note, as he is well acquainted with the circumstances of the local wheat trade, is worthy of attention.

Encouragement of clean wheat.

My own opinion on the subject, which has been asked, is that every reasonable encouragement should be given to the scheme for the introduction of wheat elevators into India. I have watched the discussions on the Indian wheat trade, which have lately been going on in England, with great interest, and I am convinced that the Government of India will be well advised to do all in its power to enable buyers to get a purer wheat than they do at present, if they are in earnest in so desiring.

Deliberate adulteration.

I am convinced, from all I have heard lately in this province and from what I myself saw in the wheat-producing districts in which I have served, that a very large proportion of the dirt and impurities which are now to be found in wheats shipped from India are not due to sweepings from the threshing floor and the mixture of extraneous grains owing to careless cultivation, but to deliberate admixture of other grains and dirt by the middlemen; and so long as buyers will accept, say, 7½ per cent. of various impurities, a seller who gave wheat with only, say, 5 per cent., would be deliberately throwing away money. The introduction of the elevator would have this immense advantage, that it would open the eyes of all buyers, sellers, and millers to the exact state of affairs, and would make it possible for those who desire to sell a cleaner wheat to do so without losing by the transaction.

I think that the Government of India should be prepared to run even some risk of loss in an endeavour to raise the reputation of Indian wheat and the Indian wheat trade.

Opinion on concessions required.

With regard to the details of the scheme, I feel more diffidence in offering an opinion. I should have thought that the Punjab with its North-Western Railway running from Peshawar to Karachi entirely under State control would have offered special facilities for the commencement of operations, but of this of course the Company are far the best judges.

In regard to the matters in respect of which assistance from Government of India is asked for on page 2 of the printed papers, I do not quite understand what the countersignature of the certificates would amount to. As to No. 2—the free provision of land—I should imagine that it would be quite impossible to accede to this, as the land asked for

would in many cases be exceedingly valuable and the property of large Corporations or Companies, and of individuals—rarely of Government. All that could be done would be to assist the Company to obtain such land on reasonable terms. Nos. 3 and 4—This seems to me to be asking a good deal, and any such concession granted should, I think, be accompanied by a corresponding obligation on the part of the Company to erect elevators wherever they are called upon by the Government of India to do so. 5—this, I think, the Government of India might reasonably be asked to do. The sum risked is, after all, only £5,000, and the possible advantages are worth a great deal more than this.

As regards the rights asked for, I have nothing to say as to 1, 2, 3, 4, 5, or 6. As regards 7 I would confine the right to make advances to ryots, to advances on the security of crops. I would not permit advances to be made on the security of their land to farmers in the Punjab at any rate. To 8 and 9 I think little exception can be taken.

It is feared that the "middlemen" will oppose the scheme.

Opposition of middlemen.

I am not sufficiently acquainted with all the intricacies of the trade to offer an opinion of any value as to this. I think it would not be difficult to ascertain the views of large buyers like Ralli Brothers and others on the point. But it appears to me that middlemen, whose assistance in the wheat trade is so absolutely essential, and without whom it would never have reached anything like even its present stage of development, will have no interest in opposing the scheme.

Naturally if a middleman finds, as at present, that the price of the wheat he sells is regulated by the supposition that it contains a certain proportion of dirt and impurities, he will take good care that he supplies duly the proportions of wheat and impurities expected. But if the wheat he has to sell is certified on *authority accepted by the trade* to contain only a certain portion of impurities, he can demand, and, I fancy, would very soon be able to command, a correspondingly higher price.

One other point only I would wish to refer to. The Company will have to be very careful from the outset to see that their certificates *merit and command the absolute confidence of the trade*, and to do this they will have to see that the employés whose duty it is to grant these certificates are men of skill and integrity, and are sufficiently well paid to be above all suspicions even of temptation, which will be very great.

63.

Commissioner and Superintendent, Delhi Division, to Director, Land Records and Agriculture, Punjab, No. 88, dated 8th February 1890.

In reply to your No. 160—1-14 of 31st January 1890, that an industry of the kind proposed should stand on its own bottom.

2. The only concession should be No. 3 of those asked for. The rights detailed below the concession asked for need no granting that I can see; what is meant probably is sole rights, and the effect of concession 3 would be to limit such rights to the first Company exercising them.

64.

Municipal Committee, Amritsar, to Director, Land Records and Agriculture, Punjab, No. 66, dated 10th February 1890.

I am in receipt of your No. 160, dated 31st ultimo, forwarding, for my opinion, printed papers relating to the "introduction of grain elevators into India."

2. I have no doubt the system possesses all the advantages claimed for it, but its adoption by wheat-growers in the Punjab I consider most unlikely for the simple reason that the conditions of America and this part of India are totally different. Conditions in America and India differ.

3. The condition of the wheat brought to Amritsar and other markets in adjoining districts has much improved of late years, and the growers are fairly honest in their transactions; it is the middleman who adulterates by mixing barley and foreign matter with wheat, and he will continue to do so, so long as the trade is prepared to accept the produce with a liberal allowance of refraction.

The refraction at present allowed by exporters is 5 per cent. barley and 2½ per cent. dirt. This, however, is to be altered with the new crop of 1890. The standard fixed by the London and Liverpool Trade Associations for Karachi wheat is 7 per cent. impurities and 2 per cent. dirt.

4. One of the many advantages claimed by the promoters of the elevator system is depriving others of the opportunity of mixing and profiting by an adulteration of dirty sample; this advantage in itself would be enough to create a strong opposition by the host of middlemen engaged in the trade, to the introduction of the system, and their opposition, considering the terms on which they work with the growers, could not be overcome by any Company, however strong. Middlemen.

5. One of the rights asked for by the Company is to advance money to the ryots on the security of their lands, crops, etc.; this measure alone I view as being quite beyond the power of any Company to carry out with success. The field is already, it will be found, occupied by the village "Shah."

6. While I admit that the system is an excellent one where the growers are independent, I see many insurmountable obstacles to its introduction into this part of India. I can see only one chance for the extension of the Company's operations in these parts, and that is by enlisting the co-operation of the large buyers, such as Ralli Brothers, McHinch & Co., and others. Were these firms to adopt the system at their principal centres, they would save large sums in freight and reap the other advantages offered by the Company in the sampling and improvement of wheat. But any attempt to deal direct with the grower and the village money-lender to the detriment of the middlmen must fail. Co-operation of large buyers.

65.

Government of Punjab, to Government of India, No. 30 S., dated 26th May 1890.

In continuation of Mr. Fanshawe's letter No. 59, dated 24th March 1890, I am directed to forward, for the information of the Government

of India, a copy of a letter No. 650, dated 2nd May 1890, from the Director, Department of Land Records and Agriculture, Punjab, with a copy of its enclosures, on the subject of the introduction of grain elevators into India.

66.

Deputy Commissioner, Delhi District, to Director, Department of Land Records and Agriculture, Punjab, No. 264, dated 27th February 1890.

In reply to your No. 160—1-14 of the 31st January 1890, I have the honour to forward copy of a note in which I have recorded my views on the subject of the introduction of grain elevators into India.

NOTE.

Scheme premature,

It is premature to think of introducing the elevator system into India until a satisfactory understanding has been come to on the subject of refraction.

There is no doubt that even without the elevator system, good clean grain could be supplied by the growers, and it would be supplied if it were not so ruinously against their interest, as the trade is at present conducted, to do so.

As every one knows, the standard of refraction for Indian wheat is absurdly high, but it is kept at its present figure by the action of the London and Liverpool Associations. Let them, in communication with the export firms, lower the standard of refraction and agree only to deal in good classified grain of the standard decided upon, and grain of that quality will be forthcoming.

With the cheap labour that is available in India, machinery can never compete up-country with hand labour for cleaning and moving the comparatively small quantity of grain that passes in one day through an up-country station.

Might be tried at ports.

An elevator at the port of export and the substitution of bulk for bags in the shipping trade might be an improvement, but even the promoters are not sanguine as to the possibility of doing away with bags before the grain reaches the sea-board.

The promoters of the company also seem to under-estimate the extent to which the export houses deal direct with growers through their *up-country Agents; the only middleman* as a rule being the *"Arthi"* or commission agent, who receives a small commission for indispensable services rendered.

The Indian grower cannot afford to hold his grain or to accept and negociate elevator warrants. What he wants is hard cash, and that he receives now as soon as his produce is weighed over in the open market.

67.

Officiating Commissioner and Superintendent, Rawalpindi Division, to Director, Land Records and Agriculture, Punjab, No. 700, dated 8th March 1890.

In reply to your No. 160—1-14, dated 31st January 1890, on a proposal to conditionally introduce the American grain elevator system in India, I have the honour to say that as the undertaking will not affect the Punjab until it shall have successfully emerged from the experimental stage, I do not think any detailed opinion on the question would now be of much value. It seems to me out of the question for Government to do more at the present stage than promise the Company, if formed, its general good-will and a careful consideration of any reasonable application put forward in a detailed manner. The Director of Railways concerned will doubtless, in self-interest, give the Company facilities for the conduct of its business. If the speculation is sound it will succeed by its own merits; if unsound, the exceptional concessions demanded as a preliminary to the formation of the Company on a small experimental scale, if granted, would not make the scheme a success. At present from the papers before me, I think the promise of the aid of Government has been prematurely sought. Limits of Government aid.

68.

Agent to Messrs. A. McHinch & Co., Ferozepore, to Deputy Commissioner, Ferozepore, dated 20th April 1890.

I beg to thank you for sending me the Government of India Circular No. 122—127 C. Agri., with accompanying letters, etc, on the above subject. I regret very much that I have not been able to reply earlier, and am sorry that I have been disappointed in my desire to make some enquiries at outstations before doing so.

The advantages enumerated in Mr. J. G. Smith's letter, dated Liverpool, 17th September 1889, and advanced as argument in support of the project, would probably be the result of its introduction, but I believe it will be a long while before any appreciable effect can be produced by it, while this district, at all events, is certainly not advanced enough to appreciate it. In fact it appears to me very doubtful for the system to gain a footing at all, since it aims at revolutionizing all the ideas so deeply rooted in native minds regarding the manipulation and sale, etc., of their grain; and people like those of India are certainly not the ones to easily relinquish their ancient practices and customs handed down from father to son. But no doubt a company undertaking such a thorough renovation of the cultivation of and trade in grain as is proposed will take into consideration all the difficulties, etc., they will have to encounter, bearing in mind that unforeseen obstacles may arise which might upset the best considered arrangements. Prospects of success small.

With regard to the extension and improvement in the cultivation of wheat, I do not think that the proposed system will effect more than what is going on at present.

The production of wheat has vastly increased during the past few years, while the area under cultivation is continually expanding. This is due to the increasing demand for export and to the encouragement and facilities offered by Government in the extension of the irrigation canals and the improvement of the cart-roads.

I believe Government have also spent large sums of money in endeavouring to improve the Indian agriculturist in his system of cultivation. If Government with all the machinery at its command has so far met with ill-success, I think a Company with limited means, and moving within prescribed bounds, is scarcely likely to effect much.

In my opinion the buyer or exporter is the person who can best work towards the improvement in cultivation, because he can insist on getting a good quality and class of wheat. The cultivator very soon appreciates the difference in price paid for good and bad wheat, and will naturally do his utmost to work up to the standard from which he gets the best value.

Faults of trade. At present, however, I believe exporters themselves mix barley dust and indifferent or bad wheat into good grain, in order to take advantage of the liberal standards of admixture and impurities fixed by the corn trade associations at Home and accepted by the buyers there. This doctoring of the wheat has in some instances been done openly and in the presence of the very men whom it is now desired to improve both in their trading morality and their system of cultivation. Under circumstances such as these it is to be expected that the native trader or cultivator will try to secure all the profit he can for himself, not only by adulterating it before he brings the wheat to market, but also by spending as little as he possibly can on its production.

It appears to me that since the demand for more wheat has caused an expansion in its production, so a demand for purer and good wheat will effect an improvement in its cultivation and quality. But so long as the English market is content with a low standard of cleanliness and purity, and no pressure is brought to bear on the Indian exporter or shipper, so long will the latter continue to ship impure and dirty wheat, notwithstanding the means within his reach of getting a cleaner and better article.

I do not see how one Company, unless it has a monopoly of the entire wheat business of India, can by itself and unaided or unassisted by other exporters, change the existing conditions of the trade, especially in the face of the opposition it is certain to encounter from those exporters whose interests will be assailed.

Combination of exporters for improvement. The best way to put the wheat trade on a firmer and more satisfactory footing is, I think, to invite the straightforward co-operation of all exporters, in shipping good, pure and clean wheat, and at the same time request the European buyers to raise their standards of purity. It is vain for one company, be it ever so well-organized and equipped with elevating and cleaning machinery, and receiving all the very liberal concessions that this one requests, to try and effect reforms where perhaps the largest interests are strongly against them.

On the whole I am of opinion that the benefits enumerated in the letter before me will scarcely be the outcome of the erection of grain cleaners and elevators, but depend on the efforts of the parties in whose

hands the business lies, namely, the buyer in Europe, and the shipper in India.

The concession and assistance which the proposed Company require from Government appear to be rather out of proportion to the benefits and advantages which they expect to confer. The countersignature of Government officials on the Company's certificates will, I venture to think, be scarcely accepted as a guarantee in commerce circles. And should the article purchased fail to come up to the terms of the certificate, from whom will the buyer be able to recover the difference in value,—from Government or the official who signed the certificate ? Concessions required extravagant.

Again, certificates a couple of months old will not show to what extent the grain has suffered from weevils or other insects.

The free provision of land is a question that may be conditionally entertained where public money would not have to be spent in acquiring it, or it might be left to the Railway Companies and Port Trusts who are likely to benefit by the concern.

That facilities similar to those which may be granted to this Company should not be granted to any other Company or individual for a period of 25 years is, in my opinion, quite out of the question, as it would be an endeavour to secure a monopoly to this one Company against all preconceived ideas of fair play.

The same may be said of the request for a grant of similar concessions at every grain-shipping port, and along every line of railway built or to be built through the grain-producing districts of India.

I fail to see on what grounds the request is made for a guarantee of interest at the rate of 4 per cent. per annum for the first five years of the Company's operations, same being repayable without interest from half of the surplus profits over 6 per cent. But supposing there are no surplus profits over 6 per cent., who is to bear the burden of such advances ?

Such payments will be made out of public money, and therefore should only be made in return for some general public benefit; but in this case benefits will only accrue to State and private railways, Port Trusts, the Wheat merchants and the Home consumers. These, however, do not form the rate-paying population of India, and it would be unfair to make the last-mentioned pay for benefits which it is supposed the others will enjoy.

I think on the whole that a private enterprise of this nature should be able to look after its own interests in the same way as all other private enterprises do, and the promoters should be in a position to demonstrate to their shareholders that the venture will be a paying one.

The very fact of them asking Government to guarantee 4 per cent. annually leads one to suppose that they themselves are uncertain or have but little faith in its success.

I have before said that I do not think the Company will meet with much success here, and my reasons for saying so are as follows.

The cultivation of wheat is carried on by individuals, the bulk of whom have only small holdings of land or are merely tenants ; each one keeps a certain number of cattle for the purpose of ploughing and watering the land, threshing the wheat, and carting same to any one of the grain markets within his district, where he thinks he is likely to realize How the ryot threshe and sells.

the best value; he has no fixed market of resort, and therefore cannot be depended on to take his produce to any one station where the Company may have its machinery and warehouses. The cleaning is done by the members of his family, and he stores the wheat either in his own godown or in others for which he pays a nominal rent in his own village. All this manipulation of the grain costs him nothing, but if he used the Company's machinery he would have to cart the wheat some distance to be cleaned and graded, for which operations he would have to pay as well as for the storage of the wheat.

From my knowledge of the native, I may say he is not the one to pay in advance or even enter into an agreement to pay later on for some possible advantage which he may or may not achieve at some future date.

In conclusion, I beg to say that while the Company deserves every encouragement and help to attain the objects which it has in view, such help should be given to them only where it does not trench upon public or other interest.

From my own experience I know that clean and good wheat is to be got here, and if the European buyer will only pay for it, I am certain the country will soon rise to meet him, and be able to supply any quality he wants. It will then be in a position to adopt systems such as that now proposed.

I have given my individual opinion as regards this part of the country, and while I feel honoured at being asked for it, I trust it will be taken as given without prejudice.

69.

Government, Punjab, to Government of India, No. 130, dated 4th September 1890.

In continuation of my letter No. 30 S., dated the 26th of May 1890, I am directed to forward, for the information of the Government of India, further correspondence submitted by the Director, Department of Land Records and Agriculture, regarding the introduction of grain elevators into India.

From Director, Department of Land Records and Agriculture, Punjab, No. 1332, dated the 18th August 1890, and enclosures.

70.

Director, Department of Land Records and Agriculture, Punjab, to Government, Punjab, No. 1332, dated 18th August 1890.

In continuation of my No. 292, dated 26th February 1890, on the subject of the introduction of grain elevators into India, I have the honour to forward copy of the correspondence noted in the margin.

No. 2102, dated the 4th August 1890, from Commissioner and Superintendent, Jullunder Division, with enclosures.

These replies to my No. 160—1-14, dated 31st January 1890, were only received on 4th August 1890.

I would draw attention to the report of the Sub-Committee of the District Board of Ferozepur composed entirely of natives of this country as of special interest.

The account given of the deliberate admixture of sand by zamindars on their way to market is, I regret to say, only in too complete accord with what is generally reported, and has indeed become a matter of "common notoriety."

71.

Commissioner and Superintendent, Jullunder Division, to the Director, Department of Land Records and Agriculture, Punjab, No. 2102, dated 4th August 1890.

In reply to your No. 160—1-14, dated 31st January last, forwarding for opinion a copy of Government of India's Circular No. 122—127C., dated 6th idem, with enclosures, relating to the formation of a Company for the introduction of grain elevators into India, I have the honour to say that I consulted the several Deputy Commissioners in this Division on the subject and am now in receipt of replies from all.

2. A copy of the reply of the Deputy Commissioner of Ferozepore with its enclosures in original, and of that of the Deputy Commissioner of Ludhiana are enclosed. The Deputy Commissioners of Kangra and Jullunder have no remarks to offer, while Mr. Dane, as Deputy Commissioner of Hoshiarpur, wrote that in his opinion "the concessions demanded by Mr. Smith are so extravagant that the scheme in its present form hardly merits encouragement."

3. My views coincide generally with those expressed by Mr. Dane and the Secretary to the Ferozepore District Board. The grant of sites free of cost and rent for the Company's premises at up-country stations might, I think, be given; but the other concessions demanded are scarcely reasonable. Unless the Railway Administration can arrange for the countersignature of certificates, I do not see that any other suitable Government agency is available The grant of a monopoly for 25 years to an irresponsible Company, working for its own profit, can scarcely be a wise measure, and the guarantee of an interest of 4 per cent. per annum for five years, when the rising value of the rupee is likely to check the export grain trade, may cause considerable loss to the State. Concessions unreasonable.

4. If the Company can supply a want felt by grain merchants in England, the improved prices which grain covered by its certificates may enable to command should, in the course of time, attract all grain to its levators, so that the Company should be able to reap a handsome profit without any extraneous aid.

72.

Report of Sub-Committee of the Ferozepore District Board.

We think that we can only speak of the Punjab and not of the whole of India as regards the need of grain cleaners and grain elevators in the Province.

Growth and practice of wilful adulteration.

The Punjab is one of, if not the most important, grain-producing and go-a-head province of the vast Indian Empire, and we are sure that not only the cultivator but the trader both in and out of India as well as the Government are interested in establishing some proper system whereby the rapidly increasing evil practice of adulterating wheat could be stopped; that this evil is daily growing is admitted freely by all. Not more than twenty years ago the zamindar brought the pure and unadulterated produce of his land to the market, got its value, and went back to his village without ever feeling the necessity of mixing dust, &c., with his beautiful wheat. It was a matter of laudable pride with the zamindar to exhibit his wheat in the open market by plunging his hand deep into the big heap, and showing a handful of the grain *without* any visible sign of dust; whereas now, while the cunning *bunya* is inventing all sorts of ways to cheat the once rough and open-hearted zamindar, the latter has by experience learnt to avenge himself on the trader by mixing dust with his grain before his cart enters the gate of the town; the writer has seen with his own eyes a string of carts standing on the road and about twenty zamindars, who had deliberately brought baskets and mattocks with them from home, coolly digging *fine* sand from a large heap and like trained men emptying their baskets in their carts full of grain; and it should here be remarked that the zamindar while loading grain at home leaves room in his cart for the dust and fine sand which he expects to mix before he has approached the suburbs of the town in order to avoid carrying dust as far as possible; and the reason why they mix fine sand is that it cannot be so easily detected, inasmuch as it does not soil the hand or cloth as real dust would. Sand being heavy and more like a particle of stone than anything else does not show itself in a heap of grain. While this struggle is going on between the *bunya* and the cultivator a third party has stepped in, *i.e.*, the foreign merchant, who was first heard of in Karrachi, but has now gradually come in close contact with the cultivator, deals direct with him, and considering the advantage that Europe has over India from all points of view, every one expected naturally that something will be now done to put a stop to this trade in dust and fine sand instead of pure produce of the country; but while one sees a great many grain sifters and other machines round about the place of the foreign trader, one is sorely disappointed to see the result, *viz.*, the complaints about the adulterated wheat of India are getting louder and louder, therefore evidently the evil is getting a strong hold of all concerned; and, as everywhere so in India, self-interest predominates; thus it is proved beyond doubt that unless Government take *active* interest in this matter things will most probably go from bad to worse. And perhaps it is not impertinent to say that had the foreign trader set a better example, both the cultivator and the *bunya* would to a certain extent have been compelled to follow it: and while we agree generally with the remarks so ably made by the Secretary of the District Board, we are far from thinking it to be advisable to "let the Company shift for itself," and, while we would on no account like to see the enterprising Company (who have made the offer) monopolise the business, we would hail the introduction of grain elevators in this country on some modified and generally beneficial terms; and as we do not feel ourselves competent enough to discuss on the terms offered

by the Company, we leave it to the proper authorities. All we beg to say is that the evil is growing, and the sooner the system proposed to clean the grain is introduced the better, only of course the Company ought on no account to be allowed to have such privileges that would interfere with "the free and fair trade" under British rule.

73.

Remarks by Secretary, District Board, Ferozepore, on the Memorandum of J. G. Smith, Esq., on the introduction of Grain Elevators into India.

Advantages claimed by scheme criticised.

(1) The reputation of India as a wheat-growing country is already an established fact, and is yearly gaining ground, while no other country can compete with it as regards cost of production.

(2) The extension and improvement of the cultivation is at present greatly accelerated by the extension of canals through desolate tracts of country which never had the slightest chance of being brought under cultivation otherwise.

(3) If an exporter is determined on adulterating the wheat he can do so after it has passed through the elevators, unless the Company monopolise the entire wheat trade and become the exporters themselves.

(4) The elevators will be erected near the railway stations and facilities for handling, storage, etc., will only affect the railway Companies, as the cultivators will still have the expense and trouble of carrying the wheat there to be stored, which means great deal in a large country like India, where road communications are yet in their infancy.

(5) The borrowing and lending of money on the grain crops will continue as heretofore, whether the Company exists or not, as the cultivators are under heavy bonds of obligations to the village *bunyas*, who will no doubt take precautions against their hold being weakened.

(6) Advantage No. 6 appears to be in contradiction with concession No. 8 when it stipulates for a guarantee of monopoly for twenty-five years.

Anticipated effects.

The benefits would be exclusively confined to Railway Companies, Port Trusts, and other parties concerned, who would no doubt look to their own interests.

India generally would be benefited as a wheat-producing country if the buyer at home would insist on getting a purer article than he at present accepts.

It is an open secret that the wheat can be and is purchased pure, but is adulterated by the exporter to the standard of impurity accepted at home.

The primitive method of cleaning and the low rate of wages in this country would be found cheaper than the advanced and complicated machine cleaner. Moreover, it is not stated what steps would be taken to prevent the wheat from being attacked by "weevils," as these insects get at the wheat very soon after it has been stored, and this injury is even more to be considered than the admixture of dirt, as it destroys the grain altogether. It is also not stated whether the cleaner can remove foreign grain such as barley, grain, &c.

Some steps are being taken to insist on a purer demand for Indian wheat, as may be seen from the letter of the Secretary to the London

Concessions. Commercial Trade Association, published in the *India Morning Post*, Saturday, 7th December 1889, page 10.

(1) The countersignature of Government officials would hardly be a sufficient guarantee to merchants, as Government officials are already overburdened with work, and their signatures would probably become a matter of routine; besides it is hardly fair to require a Government official to become a grain expert in addition to his other professional duties.

(2) The free provision of land to the Company might be made by the Railway Companies in consideration of the facilities for handling, concentrating and increasing the railway traffic. The elevators would be built of course on the railway premises.

(3) The monopoly is against all ideas of free and fair trade.

(4) The concession here asked for may be made only where the Company may be actually working.

(5) The subject is hardly of such vital importance to the country to guarantee an interest of 4 per cent., and is after all a commercial speculation of dubious advantage to a country subject more or less to famine, during which time it would be more advantageous to retain the wheat in the country and not export it all.

The rights which the Company ask for will of course depend upon the basis upon which they start their business.

In conclusion, it may be added, that it would hardly be fair to burden the rate-payer of India with a commercial speculation of this nature, and it would be far healthier to let the Company shift for itself.

74.

Deputy Commissioner, Ludhiana, to Commissioner and Superintendent, Jullunder Division, No. 206—1148, dated 23th June 1890.

In compliance with your Circular letter No. 25—364, dated 6th February 1890, forwarding for opinion certain papers regarding the introduction of grain elevators into India, I beg to state that this district never occupied such a position in the grain traffic of India as to render local experience of much value in regard to the very large question under discussion, and since the opening of the Patiala-Bhatinda Railway line any importance Ludhiana possessed as a centre of business has diminished.

2. I will take leave however to suggest that the scheme of the Grain Cleaning and Elevator Company for India is open to all the objections which attach to monopolies under State aid and assistance, and that any benefit to India as a wheat-producing country would be dearly purchased by the vicious practice of artificially fostering certain classes of productive industry at the expense of other industries and other countries, and in short that the subject is one for gradual development by private enterprise alone.

75.

From Chief Commissioner, Central Provinces, to Government of India, No. 4743 S.—88, dated 18th November 1890.

Government interference undesirable.

Referring to your Circular No. 122-127C. Agri., dated 6th January 1890, and subsequent letter No. 225 C., dated 31st January 1890, regarding the introduction of grain elevators into this country, I am directed to forward copies of the marginally-noted papers on the subject, and am to say that the Chief Commissioner thinks that the reform of the Indian wheat trade must be left to those interested in it, and that he is entirely opposed to Government interference, and especially to the attempt to create a monopoly such as is asked for by Mr. J. G. Smith. There are already large and influential firms interested in the export of wheat from these Provinces who may be quite trusted to take such steps as are necessary to secure clean wheat, as soon as the trade at home puts matters on a sound basis. The idea of a Company like that proposed attempting to deal directly with the ryots and to enter on the business of money advances appears to Mr. Mackenzie to be quite chimerical; and he can see no reason why it should be guaranteed by Government or receive any specially valuable concession such as is asked for in Mr. Smith's letter. The Government might help any such Company to acquire land on reasonable terms; but commercial enterprise now-a-days stands in no need of being bolstered up by Government in the way suggested.

1. Note by the Commissioner of Settlements and Agriculture, Central Provinces.
2. Letter No. 1162, dated 12th March 1890, from the Commissioner, Jabalpur Division.
3. Letter No. 1717, dated 24th March 1890, from the Commissioner, Narbada Division.
4. Letter No. 2958, dated 2nd May 1890, from the Commissioner, Nagpur Division, with annexures from the Deputy Commissioners of Wardha, Nagpur and Chanda.
5. Letter No. 6156, dated 25th September 1890, from the Commissioner, Chhattisgarh Division, with annexure from the Deputy Commissioner, Bilaspur.

76.

Note by the Commissioner of Settlements and Agriculture, Central Provinces.

Prices for clean wheat.

The principal object of the scheme is, I understand, the improvement of the condition in which Indian wheat reaches the European market. The Government of India is fully aware of the main reason why Indian wheat is now despatched to Europe in an impure state. Wheat is not cleaned—and, indeed, wheat is purposely adulterated—because, owing to the conditions of the wheat trade, people are paid no more for clean wheat than for wheat containing an admixture of dirt or other impurities. Nor does such an admixture involve a penalty, so long as it is within a certain percentage. Were exporters paid according to purity, wheat would be exported in a very much cleaner state than it is at present. And until prices depend upon purity, the introduction of grain elevators cannot be expected to add to the purity of the wheat.

2. Assuming, however, that the introduction of elevators would lead to a fall in the refraction limit, so that exporters would be penalized for a less amount of dirt than is passed at present, Indian wheat would of course gain in reputation and possibly in price. At all events the trade would no longer be burdened by the gross waste of money which now occurs in the payment of freight on thousands of tons of dirt which are shipped to England. It is doubtful whether, as matters stand at present, the introduction of elevators would benefit these Provinces by adding to the demand for wheat. The demand is already sufficiently strong to withdraw all surplus produce. It is claimed by Mr. Smith that elevators will be of advantage in rendering it possible for producers to export direct instead of through middlemen. But in the present state of affairs there seems small probability of this. According to the custom of the country, production is the business of one class of people and trading in produce is the business of another class. Cultivators very rarely take a hand in exporting their produce. And the only connection which traders as a rule have with agriculture arises from their money-lending transactions, which enable them to get cultivators into their power, to dictate to them what crops are to be grown, and to annex the whole of the produce.

Demand sufficiently strong for all surplus produce.

3. It is, however, extremely difficult to predict in a case like this what would be the effect of introducing a new set of circumstances, and an experiment would be well worth undertaking. Government would be justified in doing what it could in reason to assist persons in making such an experiment. It might reasonably grant a monopoly for a term of years for the erection of elevators, provided that the concessionaires were obliged to use proper diligence and despatch. It might go so far as to take up and grant land free of charge or at a nominal rent. And it might provide the salary of an official capable of granting certificates on the understanding that it incurred no liability whatever by doing so. Further, I see no great objections to guaranteeing interest for a certain number of years, provided that the liability on this account was limited to a fixed sum. But Government would not, in my opinion, be justified in granting any further concessions. With these advantages to assist them the concessionaires ought to succeed, if their undertaking is of real utility to the country.

The experiment well worth undertaking.

77.

From Commissioner, Jabalpur Division, to Chief Commissioner, Central Provinces, No. 1162, dated 12th March 1890.

Under your endorsement No. 177S.-88, dated the 11th February, you sent papers relating to the formation of a Company for the introduction of grain elevators into India.

2. The concessions asked for are:—

(1) Arrangements for the countersignature of certificates by Government officials.

(2) The free provision of land for the Company's purposes, either within or adjacent to the Railway and Port Trust premises, and connected with the lines by sidings.

(3) A guarantee that similar facilities will not be afforded to a competing Company or individual for a term of twenty-five years.

(4) That the grant of concessions as above extend to every grain-shipping port and along every line of railway built or to be built through the grain-producing districts of the Indian Empire.

(5) A guarantee of interest at the rate of 4 per cent. per annum for the first five years of the Company's operations, such advances being, however, repayable without interest from half of surplus profits in excess of 6 per cent.

It will probably occur to most people that the Company hardly have the courage of their convictions, and as the case stands it seems to me that the Company ask for large concessions, run no risk for five years, and have a good chance of within that time disposing of the concessions to some larger Company or of distributing their concessions among several Companies.

3. The views of Deputy Commissioners are these :—

The Deputy Commissioner, Jabalpur, does not feel himself "qualified to give an opinion on the proposals."

The Deputy Commissioner, Saugor, says :—

Grant of sites.

"The demands made by the proposed Company on Government for assistance seem to me more or less preposterous, but I would so far further their views by giving facilities for acquiring land in the vicinity of railway stations. Grants of free land I would not advise, for, if the Company failed, which they certainly would in many places, they would sell the plots to the local *bunya*, who would doubtless use it in many ways not to the public advantage. Small plots of land either now exist or could be acquired adjacent to any railway station in this district at a comparatively small cost. If acquired by Government, such plots might be leased at a nominal rent to a *bonâ fide* Company. On the closing of operations owing to the failure of the Company or otherwise, the land would revert to Government. Further than this, in my judgment, no concession is feasible or expedient."

Extent to which Government might assist.

The Deputy Commissioner, Damoh, thinks it "a matter of most urgent importance to the trade of India that efficient measures should be taken for the ipmrovement of the reputation of the samples of wheat exported from India. Further, if the Government wish to give a monopoly, I certainly think they should give effectual aid so as to have an undoubted claim to close and effectual check and supervision. The confidence of the public in the certificates of the Elevator Company would be increased by the knowledge that it was guaranteed by Government and liable to be taken over on the expiry of the term of guarantee. On this understanding I think the Government should give the assistance proposed by Colonel Filgate in his memorandum, *viz.* :—

"(1) Give on lease free for twenty-five years the land required for erection of elevators and sidings, and withhold similar facilities from others for twenty-five years.

"(2) Guarantee interest at 4 per cent. for the five years, on condition of being allowed close check and supervision of the work, and the right to buy up the property at its market value at the end of the twenty-five years' monopoly."

The Deputy Commissioner, Seoni, thinks the scheme a desirable one, but observes:—

"I do not understand how any Company can expect to have a monopoly of this business as seems to be contemplated, nor do I understand why any Government guarantee is necessary. If the ultimate advantages of such a scheme are likely to fulfil Mr. J. G. Smith's expectations, it ought surely to be possible for enterprising private firms to start such business even without such guarantee.

"I do not see how it is possible for Government to undertake the management of any such business directly through its own officials."

The Deputy Commissioner, Mandla, also thinks the scheme a desirable one, remarking:—

"The assistance of Government officers might be given—

"(1) in the matter of the company's certificates;

"(2) land for the erection of elevators might be given at the cost of the Company (*sic*);

"(3) similar facilities not to be afforded to a competing Company or to individuals for a term of say 10 or 15 years."

"These concessions to be limited in the first instance to certain lines of existing railways and shipping ports."

78.

From Commissioner, Narbada Division, to Chief Commissioner, Central Provinces, No, 1717, dated 24th March 1890.

With reference to your endorsement No. 177S.-88, dated the 11th ultimo, forwarding, for opinion of myself and the Deputy Commissioners of this Division, Circular letter No. 122-127-Agri., from the Under-Secretary to the Government of India, on the subject of the introduction of grain elevators into India and the encouragement which may properly be given to the Company, I have the honour to report as follows.

2. The Deputy Commissioner of Hoshangabad is of opinion that "the matter should be left entirely to private enterprise," Government only affording "facilities in the way of sites, &c., on easy terms for the establishment of the elevators."

Elevators not required while demand for dirty grain exists.

Colonel Plowden adds that, as long as the present principle of mixing a certain percentage of dirt with cleaned grain is a recognized factor in mercantile transactions, there is little hope of the proposed Company meeting with much encouragement. Even admitting that the admixture of dirt with grain could be put a stop to, Colonel Plowden would only allow of Government interference being "altogether indirect"

3. The Deputy Commissioner of Nimar has misunderstood the question asked as to how far the Company should receive encouragement from Government, and gives no reply to that point. He does not think the ryot producer will patronise the elevator much, but he thinks the mahajan exporter will, eventually.

4. The Deputy Commissioners of Betul and Narsinghpur "do not know sufficient of the subject to give any useful opinion."

5. The Deputy Commissioner of Chhindwara is somewhat diffuse and has wandered away from the subject, but practically he holds the same opinion as Colonel Plowden, *i. e.*, "that as long as the merchants and grain-producers of the country choose to pay a tax of 5 per cent.

on the cost of carriage," there is little hope of grain elevators being a success. He also objects strongly to the principle of giving Messrs. Ritchie, Stuart &. Co. a monopoly, and points out that in his opinion their demands are hardly such as Government should accept. He points out the very great difficulty there would be in arranging any system of Government control, or appointing "officials to sample their outturn and grant them certificates."

6. As far as my own views are concerned, I am inclined to think that Government interference in a transaction of this description would be a mistake. I would leave it, as in America, to the mercantile community, and I would certainly not grant a monopoly for twenty-five years. On the contrary I would encourage the introduction of similar elevators by as many firms as chose to take the risk of introducing them. I agree with Mr. Ellison in thinking that the system of countersignature of certificates by Government officials would be a mistake, for unless such officials were experts and thoroughly honest (qualifications which are extremely rare) the certificates would be worthless. In all probability the countersignature of certificates would develope in a very short space of time into a mere perfunctory performance, the certificates would be worthless as guarantees of the condition of the grain they referred to, and, although the Company proposes to hold the Government free from risk in this matter, they cannot save the Government from the discredit which would certainly accrue. One of the arguments in support of the proposal is that the position of the producer would be improved by "depriving others of the opportunities of mixing, carrying and profiting by an adulterated or dirty sample."

As the Deputy Commissioner, Hoshangabad, says, as long as a firm like Ralli Brothers finds it pay to clean its wheat and then mix 5 per cent. of earth in it—and as long as the practice is not, to the best of my knowledge, condemned by the Chambers of Commerce—I fear that the erection of a few elevators here and there, or "the simple cleaning and grading operations" proposed in Mr. Smith's letter, will have but little effect in the direction suggested. They are certainly not, in my opinion, worth the risks that Government will incur by the grant of the rights and guarantees that Mr. Smith asks for.

79.

From Commissioner, Nagpur Division, to Chief Commissioner, Central Provinces, No. 2958, dated 2nd May 1890.

In reply to your No. 1778-88, dated the 11th February last, I have the honour to say that the concessions which the projected Grain Cleaning and Elevator Company ask for, as detailed at page 2 of the enclosure to the letter from the Government of India, seem to me quite inadmissible. They involve the free grant of land close to railway stations throughout the grain producing districts of the Empire and at ports of shipment, a monopoly of these privileges for twenty-five years, and a guaranteed rate of interest on the capital embarked for the first five years, the sums so advanced not to be repaid until the profits of the Company exceed 6 per cent., and then without interest.

2. Mr. James G. Smith, of Ritchie, Stewart & Co., is evidently not a gentleman who will lose anything for want of asking. These demands seem preposterous even taken singly. For instance, the free grant of land close to railway stations means that Government would have in the majority of places to take up very valuable land at its own expense and make a present of it to the Company. It is apparently also intended that Government shall be at the expense of connecting the Company's premises with the railway lines by sidings. And this privilege is asked for practically throughout India, as almost the whole of India is grain-producing.

Scheme should not be guaranteed by Government.

3. As to a monopoly for twenty-five years and a guaranteed rate of interest, such concessions would be justifiable only in the case of undertakings like railways and canals, which are of undoubted benefit to the entire country through which they pass. There is no such certainty that this project would benefit the country to any great extent. We cannot reason from the analogy of the active, enterprising American to the slow and apathetic people of this country. The keen competition of the United States forces the farmers of that country to adopt every improvement in the processes for cleaning and transporting grain. It is by no means certain that in this country the superior facilities offered by elevators would meet with ready appreciation. The Deputy Commissioner, Nagpur, who goes more fully into the matter than the other Deputy Commissioners, does not think that these advantages would be much appreciated, and cites the alleged fact that the cleaned grain of Messrs. Ralli Brothers does not meet with much greater demand than the adulterated grain of the ordinary market. I do not altogether understand this remark. Ralli Brothers do not clean grain for sale in this country. The grain they clean they export themselves from Bombay. I should doubt the assertion that cleaned grain does not fetch a higher price, bulk for bulk, than uncleaned. I think that if an Elevator Company was started as proposed, it would probably result in some or all of the advantages enumerated on pages 1 and 2 of the enclosure. But it does not follow that Government should grant the demands formulated. Government cannot be expected to bolster up in this way every plausible commercial enterprise which may have a tendency indirectly to benefit the country. The precedent would, I think, be a bad one. It is a purely commercial enterprise and should depend for success on its own merits. I do not know why greater assistance should be extended to the enterprise than to the various spinning mills and other industries that have been established in the country.

Grain certificates objectionable.

3. The proposal that grain certificates should be countersigned by Government officials also seems inadmissible. I cannot see why Government officials should take any direct part in the business of the Company, and I think such participation would be most objectionable. I suppose the idea is that people would feel more confidence in the security of the certificates if they were countersigned by a Government official. Such countersignatures could be nothing more than a mere form, and I should think most officials would object to sign. I am inclined to agree with the Deputy Commissioner of Chanda who characterises some of the proposals as little short of "audacious."

4. As for the "rights" which Mr. Smith asks for (page 2), they are rights for which no special permission is required. If the Company

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choose to purchase land and erect their own elevators thereon they can do all these things without asking any one's leave. I can see no reason why they should not "select a few stations on some of the principal grain-carrying railways and conduct thereat simple cleaning and grading operations, returning the grain into bags, properly secured, etc." They can do this without troubling Government in the matter, as Ralli Brothers already do at Nagpur. Let them begin in a small way, and then if they succeed let them gradually extend their operations, but I am at a loss to conceive why they should be treated with any special favour by Government. Deputy Commissioners' replies are forwarded in original.

80.

From Deputy Commissioner, Wardha, to Commissioner, Nagpur Division, No. 900, dated 22nd February 1890.

With reference to your No. 1018, dated the 14th instant, I have the honour to state that, in my opinion, the advantages to be gained by the introduction of any system by which it can be ensured that Indian wheat shall reach the European markets properly cleaned, graded and certified are so numerous, that Government should certainly give all the aid in its power to the proposed scheme, especially as it would appear from the papers forwarded that it has been worked with success both in America and Russia, which is to some extent a guarantee that there will be little or no risk in making the concessions asked for.

Effects of the scheme on middlemen.

2. It is not likely that the introduction of elevators will do away with the middleman, for the majority of producers individually grow such small quantities that they would not think of carting their produce to the elevators. As now, the middleman would go about to villages and petty markets and make up a good quantity, which he would find he could not dispose of to much advantage in competition with certified grain; he would therefore in his own interests have to take it to the elevator to have it cleaned and graded. After a time the larger ryots would themselves see the advantage of going direct to the elevator and getting their certificates, which they could dispose of when they thought best.

Probable benefits.

3. Besides stimulating trade with Europe and giving Indian wheat a better place in the markets there, the following advantages would necessarily follow :—

(1) It would put a stop to dishonest weighing and measuring by which the ryots at present suffer considerably, for it is a notorious fact that in nearly all markets about this part of the country dishonesty in this respect is very common.

(2) It would be more clearly brought home to the ryots what kind of grain was most in demand, and they would grow that kind and endeavour to prevent mixture.

(3) Adulteration with earth and other things for the purpose of counteracting the dodges of middlemen in weighing and measuring would be rendered unnecessary. In Chhattisgarh I was told by royts that they had to mix earth with their wheat and linseed for this reason.

4. It certainly will be a great pity if, for want of some encouragement from Government, so excellent a proposal should fall to the ground.

81.

From Deputy Commissioner, Nagpur, to Commissioner, Nagpur Division, No. 1461, dated the 10th March 1890.

Referring to the printed papers received with your endorsement No. 1018, dated the 14th ultimo, I have the honour to observe as follows.

2. I gather from these papers that the proposed "Grain Cleaning and Elevator Company" want to establish themselves as agents only to receive consignments of grain, clean the article, store it, dispose of it when the market rates are favourable, and undertake all the incidental charges on account of loading, shipping, etc., for all of which certain fees will be charged; and that in order to establish themselves and to start with some reasonable prospect of success, they ask for certain concessions to be made to them by Government in the way of free provision of land for store godowns, etc., etc., etc.

3. The Company apparently rely on producers chiefly, but speculators would also come readily forward once they have practical proof of any thing like an increased financial return over that now realised by direct consignments to Bombay of the uncleaned grain fresh from the threshing floors or granaries.

I am not very hopeful of the Company's succeeding readily as mere agents.

Direct exportation.

4. I have been in charge of this district for about three years, I have been over nearly all of it, and have come in direct contact with many of its phases of commercial life, and yet, so far as the grain trade is concerned, I cannot recall a single instance of a local producer, be he a fairly well-to-do tenant or large prosperous land-holder, exporting direct to Bombay on his own account. The small producer is more or less in debt, and his crops are practically not his own; and the large producer is content to store and sell locally, though fully conscious that in doing so he forfeits profits to the middleman, which would be his if he exported direct. The reason is obvious; he runs no risks, he has not to wait for his money, he has no expenses to incur in carting, despatching, &c., and he readily invests the money he has received by placing it out at interest.

Inducements wanted.

5. There must then be some very clear inducement quite patent to him to tempt him to consign his goods to an agency like that contemplated; such an inducement would be that he would realise more than he does at present. There would be such an inducement if it was patent to all that adulterated grain is at a discount, and that there is a readier and greater demand and higher price for the cleaned article. The question arises, do such factors exist?

6. Then, on the other hand, if we take the class which is really the exporter of grain, we find that this class consists of:—

(1) Ralli Brothers;
(2) the floating speculating Marwaris;
(3) the travelling agents of Bhattia firms at Bombay.

The first two buy, store, and export, the third buy and despatch on telegraphic orders from Bombay. Then again, Ralli Brothers do, to some extent, clean grain before despatching it, but I am assured that this makes little or no difference in the demand for the adulterated article.

7. It therefore follows that so long as there is no perceptible diminution in the demand for grain as issued from the threshing-floors, and no restriction in such grain being offered for sale, the proposed agency will find their scheme a very up-hill if not non-paying work.

8. I note that the printed papers show that the scheme has succeeded in America, Russia, &c.; but the conditions of those countries are widely different from those in India. There the grain, as a whole, may be said to be cleaned before leaving the farm, for nearly all large growers have winnowing machines. It is otherwise in India, where the rude threshing-floor still reigns supreme. America and Russia no examples.

9. The foregoing remarks are not entirely based on my experience of the commercial life in this district, for I have consulted men who are in a position to speak definitely on the subject, such as the Ghatate, Mr. Gopal Hari, Pleader, Jadhoram Sheonarain, Deokaran, Marwari, Adamji Mamuji and others.

82

From Deputy Commissioner, Chanda, to Commissioner, Nagpur Division, No. 787, dated 28th February 1890.

Your No. 1018 of 14th February 1890, touching the proposed Company to supply India with grain elevators.

I, too, while recently at home, discussed Indian wheat with practical millers and others; I have often watched cleaning operations by Messrs. Ralli Brothers and others, and when at Jabalpore took an interest in the matter of grain-cleaning: I think it should be left to private enterprise.

The proposals are audacious in some degree, I think.

83

From Officiating Commissioner, Chhattisgarh Division, to Chief Commissioner, Central Provinces, No. 1656, dated 25th September 1890.

I have the honour to submit the remarks of the Deputy Commissioners of this division on the subject of the introduction of grain elevators in this part of the Province.

2. There can be no doubt that the cleaning which Indian wheat would undergo by means of these elevators would do much to rehabilitate its reputation in European markets, but I doubt, however, whether the present conditions of the wheat trade in this part of the country and the intelligence and morality of those who deal in wheat are such as to render the measures, found so effective in the United States, practicable here. The great bulk of the wheat which is exported from this station for the European market is despatched by regular grain-dealers, Present conditions unfavourable.

who obtain it in small quantities from the petty dealers, who visit the villages in which it is grown, or attend the small local markets to which it is taken in small quantities for sale. Now it is, I think, admitted that it is the middlemen who principally adulterate the wheat. They have not intelligence enough to see that if the character of wheat were raised in the market, that they, as well as all other dealers, would benefit thereby; or if they can understand this, they consider it futile and insensate to abstain from practices which the whole trade adopts. It is clear then that these men would not be concerned in the cleaning of their wheat, and would not therefore resort to the elevator. There are but few wheat-growers in this part of the country who export their own wheat, or bring it to Raipur or any other railway station for sale, as mentioned before. They sell the produce either in their own village or at the nearest local market; and even supposing that in time it becomes the custom for growers themselves to bring their wheat to the railway for exportation, I doubt whether they would have sufficient intelligence to understand the advantage of elevators. They would want immediate payment, and the process of having their wheat cleaned and then sold by sample would be unintelligible to them and unpopular. What they desire is an immediate sale of their wheat and its value in silver. They do not understand what a negotiable instrument is, nor would they value any such certificate. It seems to me therefore that there is but little hope of an elevator being used by any class of native traders. The result of cleaning would be against the interests of the middlemen (as they understand their interest), and its value would be quite incomprehensible to the great majority of growers who bring their wheat to the railway. The business which would be attracted to the grain elevators would not suffice to pay working expenses Any attempt to introduce the cleaning of wheat before the traders are convinced of its value (and the loss attendant on adulteration is manifest to all) will fail. The only hope of the successful introduction of the improvements in this respect is the same in this as in all other matters of advancement. The first step must be made by Europeans. More would be done by a firm like Messrs. Ralli Brothers by establishing elevators at Jabalpur, Harda, and Nagpur for the cleaning of their own wheat than by the establishment of a score of elevators on the plan proposed. When middlemen, and especially the large native dealers who purchase from middlemen, perceive the advantages of a good reputation in the principal wheat marts, and understand that an enlightened self-interest is opposed to adulteration, they will not be backward in abstaining from these vicious practices. European firms who adopt cleaning processes might be assisted by Government in this matter by granting them official certificates of the quality of the wheat exported. These certificates would in time become guarantees of superior quality, and the advantage of cleaning would eventually be made manifest to the trade. As regards the proposal that the Grain Elevator Company should make advances to growers on produce to be delivered at the proper season, I do not think that an ordinary Company could successfully undertake the duties of the local Marwari, who knows personally every one of his customers. Government in advancing money to cultivators in cases where their lands are hypothecated and sums due can be recovered as

Ignorance of middlemen.

Co-operation of large firms.

Advances to growers.

arrears of land revenue, have not always found this work easy, and have sustained losses. I hardly fancy that a private Company making loans to individual ryots without having any special or local knowledge is at all likely to succeed any better. Moreover, it is certain that the indebted and the dishonourable would be those who would first seek these loans, and would probably be quite unable to repay them. In conclusion, I would say that I do not think that the scheme of cleaning wheat by elevators put forward by Messrs. Ritchie, Stewart and Co., though it would have the most beneficial results if it could be introduced into this country, is at all practicable, or in any way adapted to the circumstances and conditions of the wheat trade of this part of India.

84.

From Deputy Commissioner, Bilaspur, to Commissioner, Chhattisgarh Division, No. 2597, dated 8th May 1890.

With reference to your endorsement No. 972, dated the 14th February last, I have the honour to state that there are no large exporters of wheat in this district to the Bombay market.

2. It is not likely that the ryots or malguzars or merchants of this district will, for some time at least, deal direct with the Grain Cleaning and Elevator Company.

Success of scheme dependent on demand of clean wheat.

The success of the Company will depend on the demand for wheat at the port of exportation. If prices are sufficiently high, middlemen will come up from Bombay to purchase locally and transmit through the Company.

3. The Company asks for the right to advance money to ryots on the security of their land and crops. It is not clear whether the Company mean by this the exclusive right to make such advances. If so, the request for such a right could not of course be entertained. If the exclusive right is not asked for it would appear unnecessary to ask permission to make advances. If the Company is prepared to make advances to the ryots at reasonable rates, it might be of great assistance to the people.

4. The local merchants who have been consulted by me are petty dealers, for, as I have already stated, there are no large exporters in Bilaspur. They were all of opinion that if the Company is ready to make agricultural advances on the security of the crop and take payment in kind, the undertaking would be beneficial to the cultivators.

5. The Company's scheme appears deserving of encouragement.

85.

Extract from the Proceedings of the Government of India in the Revenue and Agricultural Department, No. 39, dated 20th October 1893.

READ—

The following despatches from Her Majesty's Secretary of State for India :—

Despatch from Her Majesty's Secretary of State for India, No. 83, dated 27th September 1888, and enclosures.
Despatch from Her Majesty's Secretary of State for India, No. 3, dated 10th January 1889, and enclosure.
Despatch from Her Majesty's Secretary of State for India, No. 62 (Revenue), dated 4th July 1889, and enclosures.
Despatch from Her Majesty's Secretary of State for India, No. 116 (Revenue), dated 28th November 1889, and enclosures.
Despatch from Her Majesty's Secretary of State for India, No. 128 (Revenue), dated 26th December 1889, and enclosures.
Despatch from Her Majesty's Secretary of State for India, No. 90 (Revenue), dated 13th November 1890.
Despatch from Her Majesty's Secretary of State for India, No. 7 (Revenue), dated 22nd January 1891, and enclosures.
Despatch from Her Majesty's Secretary of State for India, No. 1 (Revenue), dated 14th January 1892, and enclosure.

Read also—

A Volume of papers dealing with Indian wheat impurities and the formation of a "Grain Cleaning and Elevator Company" for India.

RESOLUTION.

1. It has been acknowledged for some years past that the Indian wheat sold in England is very impure, and that both the bulk of the trade and the profits of the growers are injuriously affected in consequence. The matter has received the attention of the Secretary of State and the Government of India, and the volume of selections above quoted contains the result of the enquiries instituted on the subject.

2. In wheat exported from India a considerable percentage of extraneous matter has always been accepted by the trade. Up to 1889 the practice was that, on arrival in England, samples were taken from the various shipments, and an average quality was deduced from these by the Corn Trade Association, and made generally known; and all the wheat sold during the month was represented as of 'fair average quality.' This system saved a great deal of trouble to home dealers, but it obviously placed no check on the amount of impurity that may be mixed with the imported wheat.

3. Owing to the system of threshing and storing wheat in this country and to the practice of sowing wheat mixed with other crops, a certain amount of impurity must always be found in the grain before it leaves the grower's hands; but it is plain from the information now published that a large portion of the impurities in the wheat which

is sold in England is inserted intentionally after the grain has left the threshing-floor. It was for some time contended that in order to stop the practice of intentional adulteration, Indian wheat should be subjected on arrival in England to some test of purity similar to that applied to other foreign wheats, and the Liverpool Chamber of Commerce arranged for a maximum 'refraction' of 2 per cent. A conference was held by the Secretary of State in May 1889, and the London Chamber agreed to the principle involved so far as to fix rates for the various kinds of wheat; but the amount of impurity allowed still ranges from 4 to 7 per cent., and the Chamber have refused to reduce the percentage.

4. So far, therefore, the attempt to induce the home dealers to move has been only partially successful. Dr. Voelcker in his recent report on the improvement of Indian Agriculture states his opinion that, failing voluntary help from the trade, legislation may be found necessary, and various proposals have from time to time been made for the introduction of enactments to ensure the purity of exported wheat. The mercantile community are, however, averse to legislative measures, and the Government of India are of opinion that things have not reached a stage at which legislation would be justifiable.

5 There remains the possibility of adopting a medium course by which private enterprise shall be subsidized in order to secure the purity of wheat before it leaves the country. It has been proposed that the Government should, with this object in view, give its active support to the introduction of the American elevator system; and a despatch of the 28th November 1889, from the Secretary of State, forwarded a letter from Mr. J. G. Smith of Messrs. Ritchie, Stewart and Co., suggesting the formation of a "Grain-Cleaning and Elevator Company," and asking for the assistance of Government in several directions. The suggestions themselves, and the opinion upon them of the Civil officers, mercantile associations and railway authorities consulted will be found in detail in the volume of selections.

6. Though it was not the immediate object of the proposed Company to introduce elevating machinery on any such complete plan as that adopted in America, they desired to test at a few centres the more important practices of the American system, such as the cleaning of wheat by machinery, the grading of wheat by responsible officers, and the storing of wheat in safe and convenient places Their scheme differed little from those discussed in the Government of India's Resolution No 6—228-244 of 30th August 1879, or from that put forward in 1883 by Messrs. Reinhold of Cawnpore; but having been considered on its own merits, it has, on the same grounds as the schemes previously considered, been held to be unworkable under Government direction or guidance.

7. The idea that cultivators and local dealers should be induced to bring their wheat to the Company's premises to be cleaned by machinery has not found much support. It has been pointed out that the cultivator can supply very much cleaner grain; and that if any further cleaning is demanded, he could probably effect it on his own threshing-floor much more cheaply than any machine at a central granary. It has also been noted by many of those consulted that the further cleaning of

wheat is of very little use until the home dealers agree to ensure a better price for cleaned than for dirty wheat. Other considerations have been put forward, such as the chance of adulteration *en route* to the ports, the difficulty of providing against damage by weevil on the voyage to England, and the necessity, under any circumstances, of further cleaning before use in English mills. If the attempt to remove the premium offered on the export of dirt to England is successful, the Government would be glad to see efforts made by private enterprise to provide cheap and convenient means of cleaning wheat; but would not feel justified in fostering trade in wheat any more than any other commercial ventures, by granting subsidies in support of private action.

8. It is in the *grading* of wheat, however, that the aid of Government has been specially invited. The proposed system requires that grain received at the company's premises shall be tested and divided into grades; that all grain of the same grade should be stored in the same warehouse; that the owner should be furnished with a certificate of the grading, which he may use as a negotiable instrument in place of transferring the actual wheat. Finally, the promoters of the scheme anticipate that if proper precautions are taken, the certificates may be accepted by the home market, and that the uncertainty entailed by the present system may be avoided.

The suggested scheme could not eliminate difficulties involved by adulteration or by damage from weevil *en route* to England; but even if these were surmounted, it is feared that it would be found far less easy to work than in America or Russia, owing to the smaller scale of individual cultivation, the ultra-conservative habits of both cultivators and middlemen, and the numerous varieties of wheat requiring classification. The Government could not consent either to allow their officers to countersign certificates made out by persons other than their own servants, or to provide official agency for the purpose of classifying grain. They are disposed to think that, if the scheme is to be worked at all, measures for the grading of wheat must be arranged by a combination of the leading merchants at the seaports.

9. It is doubtful, however, whether the mercantile classes in India are likely to appreciate the advantages of public warehousing. Their instincts are apparently in favour of more confidential methods of dealing; their stocks are not as a rule collected at commercial centres, and their existing system of open-air or pit storage is less expensive than, and in the opinion of many as efficient as, any public storage on advanced lines could be. Without endorsing all the objections which the dealers urge against the system advocated, the Government of India are afraid that there is little chance of securing for it much support at present, and would prefer to wait until the expansion of local and bonded warehouses under the charge of municipal and other bodies has familiarized the public with the warehouse system.

10. On the whole, therefore, the proposal that the State should subsidize a company for the cleaning, grading, and storing of wheat, or for any one of these purposes, does not commend itself to the Government of India. This being the case, it seems unnecessary to discuss the subordinate advantages claimed for the scheme put forward, such as the certified weighment of goods, the substitution of bulk for bags, and

so forth. Nor is it necessary to notice the form which possible concessions by Government would take, especially as some of those suggested by Mr. J. G. Smith are, as pointed out in the papers, quite impracticable.* The Government of India are unwilling to do anything that would stand in the way of the introduction either of the American elevator system or of any modified form of it; but they hold with most of the commercial associations consulted that the promotion of such a system must be left to private enterprise, and that it cannot be introduced or subsidised by the State.

The Governments of Madras, Bombay, Bengal, North-Western Provinces and Oudh, and the Punjab.
The Chief Commissioners, Central Provinces, Burma, Assam, Ajmere and Coorg.
The Secretary for Berar to the Resident, Hyderabad.
The Inspector General of Forests to the Government of India.
The Agricultural Chemist to the Government of India.
The Reporter on Economic Products to the Government of India.
Foreign Department for Political Officers.
Finance Department.
Public Works Department.

ORDER.—Ordered, that the above Resolution, with copies of the volume referred to in the preamble, be forwarded to the Local Governments and Administrations, and Officers noted on the margin for information.

Ordered also that copy of the Resolution and volume be forwarded to the Foreign Department for communication to Political Officers, and to the Departments of Finance and Commerce and Public Works for information.

[True extract.]

E. C. BUCK,

Secretary to the Government of India.

APPENDICES TO PART III.

1.

Appendix A.

From the Secretary of State for India, to Government of India, No. 7 (Revenue), dated 22nd January 1891.

I forward herewith, for your Excellency's information, a copy of a letter* received from Mr. Phillip Pavy, of Elcombe Hall, near Swindon, and its enclosure, an interesting Report on the subject of the wheat industry of the Punjab, addressed by Mr. Pavy to Sir C. Aitchison in 1883. Mr. Pavy is anxious that it should not be overlooked at a time when the question of dealing with the impurities in Indian wheats is being so much impressed on public attention. In this connection I shall be glad to be advised at an early date of any recommendations you may propose to make on Mr. J. C. Smith's letter of the 17th of September 1889, forwarded to Your Excellency with my Despatch, Revenue, No. 116 of the 28th of November following.

* Dated 20th December 1890.

2.

From PHILLIP PAVY, Esq., *to* SIR GEORGE BIRDWOOD, *India Office, dated 20th December 1890.*

Since I had the pleasure of seeing you with Mr. H. Kairns Jackson when you were good enough to give me the official papers on impurities in Indian wheats, I have been travelling about and unable to report on them earlier.

As promised, I have now the pleasure to send you copy of the report I wrote in 1883 at the request of Sir Charles Aitchison, the then Governor of the Punjab, giving my views of the best means of growing in his province the wheats most suitable for the English and European markets.

I have read with very great interest the papers you were kind enough to give me which confirm in many respects what I had previously written in 1883.

I can only speak more particularly of the Punjab and the North-West Provinces which I have visited at three different times, and attended most of the principal markets to learn by actual experience the way the wheat was brought to market by the native producers.

Points for enquiry.

It appears to me the different matters for investigation to promote the success of the arrival in Europe of the wheat grown in India in quality equal to that imported from other countries are—

(*a*) Selection of seed suitable for the land and district.

(*b*) Harvesting, thrashing, and marketing the grain by the producers.

(*c*) Transit of the grain to the ports for shipment
(*d*) Customs of export merchants and shipment.
(*e*) Quality and analysis.
(*f*) Buyers and consumers in Europe.

Some of these subjects have already been alluded to in my report to Sir Charles Aitchison, and on these I have little more to communicate; but I may add—

(*a*) There are some fine specimens of wheat grown in India, and could be procured clean, and good for seed, if the hard were not planted with the soft or the red with the white. Selection of seed.

(*b*) I have seen at the country markets wheat clean and in good condition, although probably thrashed in the usual way. In California I have seen wheat harvested with a "header" clearing twenty feet at a time, at the same operation cutting, thrashing, winnowing, and putting the seed in sacks. The machine was drawn by twenty-eight horses or mules and worked by five men, and was reputed to cut sixty acres per day. But I always preferred the "binder" worked with three horses and one man doing about twelve acres a day. Cleaning.

In my opinion, judging from what I have seen, it is an exception for the producers to adulterate the wheat, it being sold by them according to quality and cleanness. There is a considerable quantity of seed and other grain sometimes grown with the wheat, but the seed and grain are easily separated by the natives, and the barley can be separated by machinery.

(*c*) With the present mode of transit there is much less damage done on the road to the shipping ports than formerly, when the wheat was sent by boats, which were more or less leaky. Transit to ort

I also think the present mode of sending the wheat in sacks far preferable to sending it in bulk in the railway trucks as in the Eastern States of America.

Granaries should be built at all the large railway stations, as in England, California and other countries.

(*d*) In my opinion, it is at the shipping ports where the bulk of the adulteration takes place, the shipping houses hoping to make a profit in two ways— Trade customs.

First, by any difference they may get in the refraction which, it appears, is 4 per cent. in Bombay, 5 per cent. in Calcutta, and if my memory serves me rightly, 7 per cent. in Karrachi; so that, if the natives deliver to the export shippers wheat at Karrachi with only 2 per cent. admixture, the export merchants would make 5 per cent. profit.

Secondly, by the large shippers making their own f. a. q., consequently being able to deliver gradually each month a quality depreciated in value to a considerable extent to the prejudice of the producer in India and the consumer in England.

Formerly in India the wheat was delivered by the native direct to the export merchants from the railway, but as they could not get a better price for their clean grain, I am informed they now take the wheat to their own godown, and reduce the quality by a mixture of siftings; probably the refuse of the export merchants who take delivery from the

native godown, cart it to their own godown, clean it down to 4 or 5 per cent. and ship it.

Quality and analysis.

(*e*) I see no reason myself why Indian wheat could not be sold on a mutual 2 per cent. refraction both in England and at the shipping ports, except that naturally the large export houses who wish, and do to a certain extent monopolise the business, would lose the chance of making the profits before mentioned.

I do not understand why the charge for analysing wheat should be more than seed, and there is no more difficulty with the invoices than with seed, Egyptian beans or other articles sold on analysis.

My experience is that with well-cleaned wheat there is little weevil.

There is no reason why an average sample could not be made and wheat sold on sample the same as with American, Californian, and other exporting countries.

In my opinion the fault as to quality of Indian wheat does not lie with the producer in India, or the consumer and miller in England, but solely, directly or indirectly, with the export merchants in India.

For the sake of the producer in India and the consumer in Europe, it is most desirable that the present contract be revised.

On reference to my Report, page 5, and taking Dr. Forbes Watson's figures, that in 1873-74 there was under wheat 5,551,794 acres in the Punjab, and the return this year, 1890, as 6,678,000, being an increase only of 1,118,206 acres in 16 years, which is much less than could have been reasonably expected with the increase in value, there is yet in the Punjab and Scinde Valley very large tracts of land that could be cultivated with wheat.

3.

From PHILLIP PAVY, Esq., *to* SIR CHARLES AITCHISON, K.C.S.I., *Lahore, dated June 1883.*

Introduction of improved varieties of wheat into the Punjab.

I must apologise for having delayed so long sending you the report I promised you of my views of the best means of growing wheat in your Province suitable for the English and other European markets, but I have been so much occupied with the development of the through transit grain business in connection with my son, Mr. M. E. Pavy, in Lahore, that my time has been fully taken up.

I regret my visit to India in 1882 was so short, and consequently gave me so little opportunity of gaining any information of the system and routine of cropping the land adopted in the Punjab, which would have assisted me very much in my present report.

In England, as doubtless you are aware, there are many systems adopted, which from experience have been found the most suitable to the localities in which they are placed and the nature of the soils to be dealt with as to their wheat-producing capabilities both as to quantity and quality.

In England, on the heavy or so-called wheat-producing land, it is customary in some districts to cultivate on the two-course system, or planting wheat every other year and beans or peas alternately with tares or summer fallow; others cultivate the same description of soil on

the three-course system, or wheat followed by spring or lenten corn and then seed or green food for stock, which is fed off on the land, and consequently manures it without extra expense.

The hill or lighter soils are farmed generally on the four and even five-course system, say wheat, then turnips which are fed off with sheep, then barley, then seeds which are either cut for hay or fed with stock when farmed on the four-course system, and when farmed on the five-course system the seed is left as old field, or, in other words, is cut or fed the second year.

In the south of Italy, where the climate resembles nearer to that of the Punjab, and I have known the thermometer 105 Fahr. in the shade, wheat is usually grown alternately with maize or other summer crops, on the reclaimed land, of which there are many thousands of acres. Wheat is grown alternately with hemp or maize, the former growing frequently ten to twelve feet, and the latter six to eight feet high.

In any case the land should be clean, well-manured, and in good order to receive the seed, which should be planted in good season.

Having the land in good condition, the next in importance is to have good seed, which should be of the new or (last crop) of good quality, clean, and free from *barley*, *gram* or *other grain seed*, and ought always to be changed, and, if possible, brought from colder and poorer land than it is intended to be sown on.

The question of the quantity to be sown per acre I cannot from actual experience give an opinion, but my impression is that generally it is too little in India, and I think 2 bushels to 2½ bushels per acre, or about 60 to 75 seers, would not be too much.

The best description of white wheat suitable for your province would be, I think,— Suitable varieties whit wheat.

1. Australian.
2. Delhi.
3. Italian Richele.
4. Algerian Richele.
5. Essex Rough chaff.
6. New Zealand.
7. Californian.

Of these the Australian is by far the best and containing more of the qualities required for the English and European markets than any other, both as regards colour and strength and for comparison as to value.

The different qualities may be estimated as follows:—

1. Australian	50	per	492 lb
2. Delhi	48	,,	,,
3. Italian Richele	48	,,	,,
4. Algerian Richele	48	,,	,,
5. English Rough chaff	46	,,	,,
6. New Zealand	46	,,	,,
7. Californian	45	,,	,,

as against 42 for the same weight of white wheat of the Punjab.

The best description of red wheat, and probably the most suitable for your climate, would be— ed wheat

1. Winter American,
2. Sicilian,

3. Italian,
4. Delhi,
5. English nursery,
6. „ common,
7. „ April,

and the relative value may be estimated as follows :—

1. Red Winter American	46	per 402 lb	
2. Sicilian	45	„	„
3. Italian	45	„	„
4. Delhi	45	„	„
5. English nursery	44	„	„
6. „ common sort	42	„	„
7. „ April	42	„	„

as against 39 for the same weight of red wheat of your province.

Thrashing. The next matter in importance, after having planted the wheat in clean and well-cultivated soil and from good clean seed, is to see that it is well cared for after it is grown, and to effect this it should be thrashed on wood floors, canvas, or even as a last resource on matting, which can be procured more or less, I presume, all over your province. The present mode, as I am informed, of treading the wheat out by oxen or thrashing on the ground or road arranged for the purpose gives it a dirty, dingy and dull appearance, and often a disagreeable and earthy smell, and deteriorates the value from 2 to 4 per quarter of 8 bushels, or 492lb., instead of its being retained, as in other countries, in its natural state, bright and glossy in appearance and free handling in bulk.

Winnowing. When thrashed the wheat should be winnowed by machine or, if this is not possible, by an ordinary fan, which could be made in the country for a few rupees; the latter was the usual way of winnowing the corn in England before the machine, now so general in use, was introduced, and which answers the same purpose, but is more tedious in the operation.

Storing. After being cleaned it should be kept so by being put in a proper warehouse instead of the dirty back hovels I have seen it in, by which means the corn becomes weevilly and gradually of more and more inferior quality. When taken to market it should be conveyed, whether on bullocks, camels, or carts, in sacks, and not put on the road or in the squares when exposed for sale, as is customary now at Ludhiana, Delhi, and other places.

I see no reason why your province should not grow wheat of quality, if not equal in value, nearly so to the best wheat-producing countries of the world.

Values. Taking the relative values of the average qualities of white wheat at this time on the London market as before estimated as follows :—

Australian	50	per 492 lb		
Italian Richele	48	„	„	
Algerian	48	„	„	Average 47 per 492lb
Californian	45	„	„	
Oregon	45	„	„	
New Zealand	46	„	„	

against

Punjab	42	

and the red wheat—

American Winter	46 per 492 lb	Average 45-4 per 492 lb
Italian	46 „ „	
Sicilian	45 „ „	
against		
Punjab	39	

In Paris the relative values estimated by one of the large merchants are for white wheat—

Australian	28 francs per 100 kilos	49 11 per 492 lb
Italian Richele	28 „ „	49 11 „ „
Algerian	28 „ „	49 11 „ „
Californian	26·50 „ „	47 3 „ „
Oregon	26 „ „	46 4 „ „
New Zealand	25 „ „	44 7 „ „
Average being	48 per 492 lb	
against		
Punjab	23·59 francs per 100 kilos	41 11 per 292 lb

and red—

American Winter	26·50 francs per 100 kilos	47 3 per 492 lb
Italian Richele	27·50 „ „	49 1 „ „
Sicilian	27·50 „ „	49 1 „ „
Average being	48·6 per 492 lb	
against		
Punjab	22·50 francs per 100 kilos	40 2 per 492 lb

I have not considered in this report the question of hard wheat, of which there is a considerable quantity grown in your province, but which is only saleable on the London market in moderate quantities, and of that imported the greater portion is re-exported for Holland, Belgium, or Spain. These qualities also find a better market in Italy and the Mediterranean markets generally.

In taking therefore the average price of the six countries that supply England with white wheat, and whose climates approach the nearest to that in your province, we find for the London market it is 47 per quarter of 492lb as against 42, the value of the average quality of white wheat grown in the Punjab, and in my own mind your province may grow white wheat equal, if not superior, in quality, and of the same value in this market as the average of these countries.

In red wheat I have taken the three countries where the climates are about the same as regards heat as your own province, and we find the average value on the London market is 45 per quarter of 492lb against that grown in your province, 39.

In Paris the average value of the six different qualities of white is 48 per 492 lb against 41-11, the value of yours, and red, 48-6 against 40-2.

The difference therefore in the average value of the white and red wheat of the same qualities grown in the different countries mentioned for the London market is as between 46-5 and 40-6, and for the Paris market as between 48-2 and 41-0½, or an average, we may say for the European markets of 6·7 per quarter less for the wheat grown in the Punjab than the average of the other countries from whence we draw large supplies; this at 1-8 per rupee will make a difference of something over 10 annas per maund.

Economic effect of improvement of quality.

Taking Dr. Forbes Watson's figures that in 1873-74 there were 5,551,794 acres under wheat in the Province of the Punjab, and that it had increased in four years, say in 1877-78, to 6,983,904 acres, and presuming the increase to continue in the same proportion, and that in 1882-83 the area under wheat to be estimated at 8,774,041 acres, and as the crop this season is considered to be a large one of good quality and may be calculated at 10 maunds per acre or 87,740,410 maunds or 14,623,401-4-6 quarters of 492lb, and presuming that the quality could be improved in value, and brought up to the average standard of other countries of somewhat similar climate or, say, 10 annas per maund, it would amount to a sum of no less than, say, R54 837,756 or an average of R6-4-0 per acre; these figures may seem fabulous but may be possible, and, if so, it would be difficult to foretell the good that would accrue to your province if over five millions of pounds sterling could be augmented to the receipts of the producers by the improvement of quality alone.

Seed experiments.

It is difficult for me, having no actual experience in the production of wheat in India, to even venture upon a suggestion of which would be the best description of wheat to recommend for seed in your province, but seeing the enormous amount of money, probably pounds sterling 5,000,000, involved in the question of quality alone, it may be worth the consideration of your Government to make a practical experiment by planting a few acres of each sort of wheat in four or five different localities.

This would be a comparatively inexpensive experiment, and would prove by actual results the best seed suitable for the soil and climate.

For the qualities of white wheat, unquestionably the Australian is the best grown suitable for the English and European markets, containing the qualities most requisite both as regards colour and strength for making flour of greatest value, next to Australian, if sent to market clean and in the same condition is the long-berried wheat grown in the Delhi and Meerut districts; next would be the white Richele of the South Italy and Algeria; some Californian and Oregon may also be planted for experiment. Some white Spanish may also be tried, as well as English, but I am doubtful if the experiment would be successful.

Considering that the expenses and carriage of sending the grain to the European market is considerably more than the first cost paid the producers, and as these charges are the same on wheat of the value of 50 per quarter as 40, it is of the greatest importance for the farmers to grow the best quality possible to enable them to get the highest prices.

As regards the qualities of red wheat, the long-berried description grown in the Delhi and Meerut districts, if sent to market in the same good condition and clean, would probably make as high a price as any grown on the English and European market. Next to this would be the Italian and Sicilian: these qualities are particularly liked by the millers in France and Belgium, and next would follow the red Winter American which is more appreciated in England than on the Continent on account of its strength. There are also, I have no doubt, some descriptions of red English wheats that may do well in the Punjab, particularly in the north, and would be worth a trial.

There are also the fine red wheats of the south of France grown in the Merac and Dordoigne districts, and the finer descriptions of Hungarian grown in the valley of the Theiss and from which the flour used by the Vienese for making probably the best bread in the world is produced, and may answer well in your province. Transit rates.

Presuming that the quality of the wheat can be improved, and in my own mind I have no doubt on this point, the next question to enable your province to compete successfully with the countries from which we have up to this time usually drawn our supplies, is the question of transit rates by railway and shipping charges. Land freights.

In America, where of late years we have drawn the bulk of our supplies, the ordinary railway rates are 20 to 27 per ton for 1,000 miles, or an average of 23-6, including terminal and shipping charges; whereas on the Scinde, Punjab and Delhi and Indus Valley Railways, at the lowest rate of 16 pies per 100 maunds per mile and exchange at 1-8 per rupee on the same distance, 1,000 miles, it is as follows :—

	R	*a.*	*p.*
Railway rates	22	8	0
Ferry charges	1	11	0
Terminal	0	6	9
Shipping charges, Port-dues, and agency	2	0	0
	26	9	9

or 44-4 per ton as against an ordinary average rate in America of 23-6, and this will clearly show so far as railway rates, charges, &c., are concerned, the producers in your province pay 20-10 per ton more than their competitors in the far West of America.

I have here spoken of and made comparison with the ordinary rates in America, but during a war of rates with the railways, grain is frequently carried at 10 and 12 per ton per 1,000 miles, or about one-quarter the amount paid from the Punjab.

These figures will, I think, speak for themselves, as far as inland rates and charges are concerned, and show the position of the producers in your province in competing for the food-supply of this country.

As regards ocean rates there is no monopoly, and freights are regulated in the usual way by supply and demand; they are sometimes high and at others low. I have known rates for freight even from Calcutta sometimes 12*s.* per ton for wheat, and sometimes 70 and 80. Ocean rates.

The annual requirements of the United Kingdom may be estimated at twelve to eighteen million quarters, according as our crop here is more or less abundant, the bulk of which has of late years been supplied us from America, and the question may be asked if our own colony, the Empire of India, could not compete successfully for the supply of a considerable quantity of this wheat, and millions sterling paid to the producers in India instead of America, and in spite of the boasted millions of acres of rich alluvial soil reputed to be yet uncultivated in that country, with land in India at the same or less rent, labour at 2 to 3 annas, 2½ to 3¾ per day, instead of 6 to 8, fairly cultivated soil, suitable seeds, and proper care taken of the wheat when grown with a climate far more certain and favourable for the production of wheat than America, and with reasonable and not excessive inland rates of

transit, there can be no reason why India, your province of the Punjab in particular, should not successfully compete for the increasing requirements of the United Kingdom and other European countries.

If you think I am able to give you any other information on this subject, I am quite at your disposal.

Appendix B.

The Grain Trade of the Caucasus and the future of Novo Rossiesk, by W. Barnes Stevens, Special Commissioner in the Caucasus.

1.—The existing depression in the Russian grain trade.

In the present and succeeding articles I purpose laying before the readers of the *Mark Lane Express* the results of a special enquiry, which I have recently undertaken, as to the causes of the existing depression of the Russian grain trade, and as to the prospects of the trade in view of the recent introduction of the American system of storage at Novo Rossiesk, the new Black Sea port. Those who take an interest in Russian commercial affairs will be aware that at the present time this important question is engaging the serious attention of the Imperial Government. It was the object of the recent tour of that energetic and indefatigable Russian statesman, M. Vishnegradsky, the Minister of Finance, to ascertain, by enquiries made on the spot, the extent of the material resources of Southern Russia, the Caucasus, and the territories of Russia in Central Asia, and especially the development of the grain trade by means of the improved methods of carrying on that trade adopted at the new port abovementioned.

A recent report furnished to M. Vishnegradsky by the Railway Companies states that the main causes of the depression in the Russian grain trade are :—

(1) The fluctuating value of the rouble, and the uncertainty of the amount of the shipping and railway expenses, which render it impossible for importers and shippers to make reliable calculations.
(2) The poverty of the peasants and farmers, which compels them to sell their grain immediately it has been gathered.
(3) The large number of middlemen between the producer and the consumer, and the absence of elevators and magazines for storing grain.

So far as this statement goes it is perfectly correct, but I am surprised to find no allusion in it to a practice which, to my mind, has more to do with the present languishing condition of the trade than any of the conditions above referred to. I refer to the wholesale system of adulterating the grain. It is this abominable custom which has, I believe, eaten away the very life of the trade; and as this is a question affecting

British buyers and consumers, it is well that they should possess some reliable information on it. I am informed by a Russian Railway official, connected with one of the principal lines in Southern Russia, that his Company is doing quite a large business in carrying to the various grain ports a composition known as "Ostalkee," the avowed purpose of which is the adulteration of the grain prior to shipment. "Ostalkee," in plain English, means "leavings," and consists of the bran, husks, dust, sand, and small particles of straw left after the grain has been threshed. It is bought from the peasants in large quantities and conveyed to the ports for this nefarious purpose in truck-loads at a time. So common has this practice of adulteration become that people have begun to regard it as a natural condition of the trade. The farmers and peasants are not responsible for this malpractice, although they could, of course, and would, if they knew their best interests, minimise it considerably by refusing to sell the ostalkee. The grain, when it leaves their hands, is in good condition and "up to sample," equal, and often superior, in quality to the grain of any other exporting country. But it is not long in this condition. The Jewish, Greek, Russian, and Armenian middlemen, into whose hands it then passes, make a practice (as a St. Petersburg editor avers, who has written much against the abuses of the present system) of opening each sack that they purchase from the producers, and deducting from it 20 per cent. of the pure grain, they place of which they supply with spoilt grain or the rubbish above referred to. In this way they not only make a profit on the mixed parcels, but a clear profit of 20 per cent. on each sack shipped. Nor are these unscrupulous shippers, content with having in this way destroyed the once good name of Russian shipments, but, in pursuance of the same suicidal policy, they are doing their best to make Russian agriculture altogether unprofitable. In districts where there are no Railway Companies or banks to make advances on the grain, the great grain houses established at the principal ports have the farmers and peasants completely at their mercy. They form "rings," or "corners," and, having agreed upon a price amongst themselves, telegraph it to their agents in the interior. Thus the producer, the victim of an organised conspiracy, frequently has to sell his grain at a price far below its natural value. A very small portion of the sums which his grain ultimately fetches in London and other markets goes into his pockets, frequently not enough to cover the rent of his land and the costs of production. The greater portion goes towards defraying the great expenses in respect of carriage, freight, warehousing, and in meeting the charges of the middlemen, which, when compared with those of other countries, cannot but be regarded as exorbitant.

But the peasant has not only to contend with unfavourable conditions of outside origin; he has to contend with his own sluggish and easy-going temperament. It is a deplorable fact that the Russian peasant is far too much addicted to vodka, and that he lays hold of any and every excuse for taking a holiday. In short, as a rule, he is not industrious. Further, being ignorant,—and for his being ignorant the Government is more responsible than himself—he is conservative in the extreme and consequently averse to trying any of the "foreign inventions" as he terms the labour-saving agricultural machines of Western civilization. It is difficult even to induce him to abandon his antiquated plough, a

large, heavy, and incomplete article, which it takes seven or eight pairs of oxen to put in motion.

With such influences at work without and within, it is scarcely to be wondered at that the condition of the Russian peasant has become one of almost chronic poverty. But if the peasant is in a bad way, the landlord is in a worse, for the latter, since the emancipation of the serfs robbed him of his farm labourers, has gradually gone downhill. The late sudden rise in the value of the rouble seems to have completed his misfortunes; it has driven members of his class into the hands of that just now much-abused nation, the Jews, and have forced others to sell their lands to peasants at almost nominal prices. In some parts of Russia, where the conditions for growing corn are most unfavourable, both landlords and peasants have entirely ceased growing corn for purposes of export. "I am so disgusted with the present state of affairs," said the landlord of an immense estate in Poland to me the other day, "that I am allowing my land to lie fallow; for, at least, if I do not gain anything, I shall not ruin myself by selling my grain at a loss." One can imagine a farmer in England acting thus, but it is extraordinary to find one doing so in a country where, if anything should prosper, agriculture should. Yet, as things are at present, it is difficult even for a farmer working on his own land to make a profit. A desjation (equal to 2 acres 2 roods 32 poles, English) of the finest land in the Caucasus, suitable for growing wheat, may be leased for a very small sum, and yet the expenses of ploughing, sowing, reaping, and threshing are so heavy that a profit of more than 10 roubles is rarely made. This being the state of affairs, it does not require much acumen to see that something is wrong at the core of the Russian export grain trade; but it is reassuring to those who have the true interests of that trade at heart to find that M. Vishnegradsky has come back from his visit to Novo Rossiesk and his tour in Central Asia, thoroughly convinced on this score, and resolved to give free scope and Government assistance to those who are trying to bring about a reformation of the trade. It is late in the day indeed that this decision has been come to. The present stagnant condition of the grain trade had come to be looked upon as its normal and hopeless condition. When we reflect on the extent of the arable portion of the Russian Empire, and the vastness of the interests involved, the lethargy from which the Government are now tardily awakening was at once inexcusable and well nigh inexplicable. The fact is that, for the last thirty years, the Tsar and his Ministers have been paying too much attention to the manufacturing interests of the country. They have spent millions in fostering these, have enabled a few manufacturers to become millionaires, but until the present moment never seemed aware that they had any agricultural interests worth looking after. The Tsar is to be congratulated, however, in having, as his Finance Minister, a statesman so painstaking and patriotic as M. Vishnegradsky; and now that this gentleman has become thoroughly alive to the necessities of the situation, he will do his best to make up for lost time. Already something has been done to improve matters more has been resolved upon, and much is under consideration. What steps have been taken, and what further measures are likely to be adopted, I reserve for future communications; and I hope to show from the

remarkable history of the rise of the new port of Novo Rossiesk, which I had the pleasure of visiting this summer, slightly in advance of the Finance Minister, that there are good grounds for the belief that a thorough reform of the Russian grain trade has been successfully initiated, and that it is by no means unlikely, if things go on as they have begun, that America and other grain-exporting countries will soon find it difficult to hold their own with Russia. Perhaps they may even be ousted altogether from European markets.

Novo Rossiesk, the important departure at which is likely to have far-reaching effects on the future of the Russian grain trade, is situate, as will be seen from the accompanying map, on the Black Sea, at a spot about 100 miles to the east of the Straits of Yenikale, where the western extremity of the Caucasian range approaches the seaboard. In its position at the head of a magnificent natural harbour, with mountains at its rear and sides rising to an altitude of several thousand feet above the level of the sea, their slopes covered with groves of wild apple, pear, plum, and other trees, it presents a remarkable resemblance to the harbour of Palermo. Though possessed of such manifest natural advantages as a port, no attempt was made to utilise it until two years ago. It aspired to be nothing more than a small fishing village, and boasted no other signs of Russian occupation than a few Russian soldiers and officials. Beyond its outskirts Muscovite rule did not extend, or at any rate was not respected. Such of its inhabitants as, in pursuit of game, ventured into the mountains did so at the imminent peril of their lives. These heights were held by Circassian mountaineers, who successfully resisted all attempts to dislodge them from their fastnesses, and who knew no more enjoyable sport than "potting" those luckless members of the garrison who happened to come within range of their rifles.

2.—The rise of Novo Rossiesk.

A different state of things exist now. The troublesome Circassians have given place to Russian, French, German, and Greek settlers, busily making their fortunes; and the quondam fishing village, emerging from its obscurity, has become a thriving grain port of some five thousand inhabitants, with a trade even now only third in extent to that of Odessa.

How this magical transformation has been effected is an instructive history. The good fairy has not been the Government with powder and shot; but that pacific and potent civiliser, the railway. About three or four years ago M. Stanislaus Kerbedz, a Polish engineer of high repute, recognising the possibilities latent in the place, conceived the idea of joining it with the Vladikavkaz Railway (of which he was then a Director) by a branch line to Techoretz. From this station Novo Rossiesk is distant by the route chosen not more than about 300 miles. It lies, however, on the other side of the Caucasian range. To carry the Engineer's project into effect, it became necessary therefore to bore through these mountains. The construction of two long tunnels was found to be inevitable. Such an undertaking would necessarily involve enormous expense, but the Company, strong in their belief in the beneficial effects it would produce, did not hesitate. The work was rapidly pushed forward, arrangements at the same time being made for the reception of

the grain; and in August 1888 the port and line were thrown open for traffic. In my visit to the place this summer, starting from St. Petersburgh, I, of course, travelled over the new line. The main line begins at Rostov, on the Don, and the portion of it which lies between that port and the junction Techoretz passes through the southern part of the country of the Don Cossacks (Zemlia Boiska Donskago), and thence through the district of the Black Sea Cossacks. A journey of a hundred miles farther on brought me to the river Kuban at Ekaterinodar. Throughout the whole distance from Rostov to this place nothing was to be seen but steppes covered with fields of wheat, the produce of the rich black soil (Tchornee Zom), which extends for hundreds of miles on either side of the line, and pampas plains supplying pasturage for thousands of sheep and cattle, with here and there a Cossack village. After leaving Ekaterinodar, the line passes through a region abounding in oak and wild fruit trees, dotted here and there with plantations of tobacoo. So thickly-wooded is this region that it is estimated to comprise about five million acres of oak and other timber. Palm trees and box-wood also flourish, and away up the mountain sides rise immense pine forests, already being exploited by French capitalists. As might be expected, these forests and mountains are full of various kinds of wild animals and game. Even within a few hours' walk of Novo Rossiesk, those fond of sport can have as much as they desire. Nor need they fear molestation at the hands of fanatical Circassians, as these former holders of the mountains have nearly all been shipped off to Turkey. As many as ten thousand of them were, it is stated, so got rid of last year. The territory thus almost depopulated is being rapidly leased or bought up by Greeks and Frenchmen for the cultivation of the vine and the tobacco plant, while near the town itself cement works have been established by some Germans. The rocks round the bay of Novo Rossiesk are formed of a natural cement, requiring only to be crushed to be ready for use, and the astute Teutons, who have found out this fact, are, the English Consul assured me, making at least 60 per cent. on the working.

Living is not dear in Novo Rossiesk. Meat of the finest quality can be purchased there at 2*d*. a pound and a whole ox of the celebrated Circassian breed for £3 or £4.

Fruit for all description abound—pears, apples, melons, grapes, plums, peaches, apricots, and walnuts. A good water-melon costs about 1½*d*., and a pound of fine grapes about the same amount. The finest tobacco is also grown in large quantities, and is sold at the rate of about 6*d*. a pound. It is subject to a slight duty, and the growers are chiefly Greeks, who send it to Rostov, on the Don, at which place it is made up into cigarettes and sold as Turkish at about 14*s*. a pound.

Possessed of such natural advantages, and such varied resources, Novo Rossiesk would have a prosperous future before it, even if it did not afford so convenient an outlet for the grain of the Caucasus, and this consideration doubtless weighed with the Directors of the Vladikavkaz Railway Company when they were deciding as to the construction of the branch line. The main object of the Company, however, was the development of the grain trade of the Caucasus, and it may be said at once that their sanguine anticipations on this head have been more than realised. Indeed, the grain export has advanced literally by leaps and bounds. This satisfactory result is abundantly evidenced by

the following table, which gives the amount of grain (including a little flax) loaded at the wharves of the Railway Company for each month, from August 1888, when the port was opened, to June 1889 :—

Month.	No of steamers.	Tons of cargo shipped.	Average cargo per steamer.
1888.			
August	1	1,580	1,580
September	2	3,455	1,728
October	3	5,439	1,823
November	7	12,873	2,083
December	6	11,249	1,872
Total	19	34,596	1,901
1889.			
January	13	23,534	1,810
February	14	26,676	1,906
March	16	27,909	1,813
April	4	7,392	1,878
May	7	15,214	2,209
June	11	21,422	2,097
Total for first-half of 1889	65	122,147	1,968
Total for the eleven months, from August 1888 to June 1889	84	156,743	1,914

[In calculating the average cargo three steamers have been omitted as they did not take a *full* cargo from Novo Rosseisk. They only completed their load there.]

Thus, during the first six months of 1889, nearly four times as much grain was exported as during the five months ended December 1888. Four-fifths of this grain was carried by steamers bearing the English flag. To the figures given above, 25,000 tons must be added as taken up by 100 sailing vessels and coasting steamers. The total turn-over of the port during the first eleven working months of its existence thus exceeded 180,000 tons. This remarkable activity has been maintained. By December 1889 the total exported had reached over 338,000 tons, and by July of the present year over 671,000 tons. The figures for each month of the present year, up to and including July, are as follows, *viz.* :—

Month.	Tons of cargo shipped.
January 1890	41,760
February ,,	42,060
March ,,	44,480
April ,,	52,220
May ,,	53,220
June ,,	52,450
July ,,	51,430
Total	337,620

It may, therefore, be confidently expected that the export for the present year will exceed 600,000 tons. Not only has Novo Rossiesk, in the short space of two years, outstripped the smaller ports in the amount of export, but it seems likely that before long it will do more business than Rostov. According to the gazette of the Minister of Finance (No. 32) the exports from the following ports for the present year, up to August 4th last, were as follows, *viz.* :—

Name of Port.	Poods* of cargo shipped.
Odessa	44,590,417
Rostov	29,921,680
Novo Ressiesk	20,674,987
Libau	15,750,736
Sevastopol	8,925,640
Riga	6,752,452
Reval	6,818,112

* One pood = $36\frac{1}{10}$ lb English.

The significance of these statistics is obvious. I have now to point out that this striking success of the new port has been due mainly to the enlightened policy which the Vladikavkaz Railway Company have pursued. The details of that policy will form the subject of my next article.

3.—The Policy of the Vladikavkaz Railway Company.

The statistics given at the end of my last article demonstrate in a forcible and unmistakable way that the whole of Europe, and in particular the British Isles, may now reckon on receiving large and continuously increasing supplies of grain from a new and important source. This fact is of as supreme importance to the "struggling masses," to whom it holds out the prospect of a reduction in the price of bread, as it is to the corn trade, who cannot afford to ignore such an important factor in making their calculations. To make this prospect the clearer and these calculations the easier, I shall endeavour in the next and concluding paper of this series of articles to convey some idea of the extent to which the resources of the Caucasus are still undeveloped, and of the measures in contemplation by the Russian Government and the Railway Company for the purpose of bringing about their thorough development. In the present article I shall examine the causes which have brought Novo Rossiesk into its present prominent position as a grain port. The readers of the *Mark Lane Express* will then be the better able to estimate what probability there is of the continued development of the Caucasus.

As I have already indicated, the main cause of the sudden rise and prosperity of Novo Rossiesk has been the wise and patriotic policy pursued by the Vladikavkaz Railway Company, to whom practically the port belongs. But the fact should not be lost sight of that to the success of that policy the many and important natural advantages of the port have contributed in no slight measure. Incidentally, I have already touched upon some of these; but a circumstance remains to which I should direct particular attention. To those of your readers who have attentively perused the pregnant figures given in my last article, this circumstance will have been already revealed. It will have been observed by them that the grain export of Novo Rossiesk has gone on as merrily in the winter as in the summer. While Odessa and other Black

Sea ports have been closed in consequence of frost, the new port of the Caucasus has been doing a roaring trade, without the intermission even of a single day. In the severe first three months of the present year it exported upwards of 120,000 tons of grain. At the present moment, when at the older ports all is hurry-scurry in order to get off as much grain as possible before the frost commences, the new port, enjoying absolute immunity from frost, pursues the even tenor of its way rejoicing. On this account alone Novo Rossiesk has a tremendous pull over the older-established ports of the Black Sea and Sea of Azov. It would be only fitting then that, in an enumeration of the natural advantages which have made for the success of Novo Rossiesk, this circumstance should be accorded the premier place.

First, then Novo Rossiesk is a port that never freezes.

Secondly, it affords a more convenient outlet than Rostov-on-the-Don, not only for the rich black soil district tapped by the main line of the Vladikavkaz Railway Company—a territory of some 5,000 square miles, of which a large proportion is still uncultivated—but also for the exceedingly fertile and, until recently, entirely undeveloped district tapped by the branch line connecting it with Techoretz.

Thirdly, it possesses the advantage of a position at the head of one of the finest natural harbours in the world.

The bay of Novo Rossiesk is nearly 5 miles long by 2½ to 2 miles wide, covering an area of 5,000 acres. Its entrance is perfectly safe, and properly marked by beacons and light-houses. Its northern extremity forms a large and deep harbour, being 1,500 acres in extent and 45 feet in depth. It is possible for ships capable of carrying 3,000 tons to take a full cargo from the wharves of the Railway Company. When the large size of the steamers of the present day is taken into account, the new port will be seen to possess in this feature no slight advantage over the older-established ports of the Black Sea and Sea of Azov, which both in depth and in extent are its inferiors.

Novo Rossiesk was thus certain of some degree of success, whatever policy the Railway Company thought fit to adopt. That the Directors took the line they did is therefore immensely to their credit, and it augurs well for the future of the Russian Empire that men of their enterprise and capacity continue to appear. When the vast sums of money expended on the undertaking, amounting to a total of twelve millions of roubles, are taken into consideration, no one would have been surprised to find the Company adopting every means in their power to ensure a speedy return of their capital. Assuredly no one could have blamed them had they taken this course. The Directors, in not doing so, seem to have subordinated their own pecuniary interests to the general good, and this in spite of the Imperial Government looking coldly upon their undertaking. They seem to have recognized to the full the gravity of the evils affecting the grain trade, and to have felt that upon them the duty of grappling with and overcoming them devolved. They saw the opportunity that presented itself in Novo Rossiesk, and they determined to make the best possible use of it. They set before themselves the twofold object of restoring the once good name of Russian shipments, and of making agriculture a less unprofitable calling to the farmers of the Empire.

To this end they introduced at Novo Rossiesk, and at the chief stations of their line, the American system of storage, and fixed their carriage and shipping charges at an exceedingly low figure. Indeed, on the shipping charges they have not aimed at making any profit at all. The only profit they seek is that which they hope to derive from the increased carriage of goods from the interior to the port. With the Government sanction they discharge the grain from the trucks, clean and sort it in their storehouses, then re-cart it to the piers, and finally ship it at the following low rates :—

(1) Cartage from trucks to store-houses, weighing and stapling 4 copecks per 10 poods (361 lb).
(2) Shovelling, 2 copecks per 10 poods.
(3) Shifting and cleaning, 3 copecks per 10 poods.
(4) Carrying from stores to the Company's trucks, bagging, it required, weighing, cartage to piers, etc., 15 copecks per 10 poods.
(5) Work in the hold :—(*a*) Single-decked boats, 1 copeck per 10 poods ; (*b*) double-decked boats, 1½ copeck per 10 poods ; (*c*) bagging in hold, 2 copecks per bag.

[One copeck = about one-third of a penny.]

Not only are these rates exceedingly moderate in comparison with those levied at other ports, but they are not liable to fluctuations, excluding in this way the possibility of the introduction at Novo Rossiesk of those rules and customs which, in other ports, have been so just a cause of complaint on the part of merchants and ship-owners. Although the work is done thus cheaply, its performance is none the less efficient. The Company keep permanently on their premises a properly organised set of experienced workmen.

Again, the Company spare no pains to ensure despatch in loading. At present vessels are loaded as they lie alongside the wooden piers of the Company. These structures are three in number, and (as will be seen from the accompanying phototypes) of considerable length. Together they enable six large-sized vessels to load simultaneously, and five average-sized ones to complete their cargo. The grain export they thus provide accommodation for is very considerable, amounting to upwards of 65,000 tons during each busy month of exporting. One of the piers is two-storied, and is connected with the station and warehouses by a stone viaduct. It is similar in plan to the piers at South Shields, Bilbao, Huelva and Odessa. While loading proceeds by manual labour at the lower platform, from the upper platform the grain brought from the store-houses in special wagons may be shot into the hold. All the piers are provided with the electric light, so that the custom house authorities permitting, the work of loading can be carried on by night, whenever an accumulation of vessels or other circumstances renders such a course desirable.

These facilities for despatch in loading, in combination with the low rates charged, render Novo Rossiesk an attractive port to English Captains. At no other port can they obtain a cargo so quickly and so cheaply. At Novo Rossiesk a cargo of 2,000 tons of wheat

can be shipped in the short period of twenty-four hours, at just one-half the cost which would be incurred at any other Black Sea port. Then, too, if a vessel meets with a mishap at the port, it does not—as in other Russian waters—become the prey of a salvage company. Her Captain has only to invoke the aid of the Vladikavkaz Railway Company, and without delay tugs, divers, and all means of salvage are provided; everything is done that can be thought of to put the disabled vessel in speedy repair. For this service the Company charge only the bare cost of the work done. They even offer to refer their bill to Lloyd's agent, and to be content with whatever sum that functionary may think meets the requirements of the occasion. The tug belonging to the Company is English-built, and is supplied with engines of 300 horse-power. It contains appliances for the extinction of fire, and for draining the holds of vessels. Repairing shops have also been set up for the repair of the machinery and hulls of vessels. These are under the management of an experienced English engineer. In addition to these services, they undertake, if desired, at special rates, to see to the due performance of custom house formalities, the victualling of vessels, and the providing of vessels with water, fuel, materials, etc. They provide also interpreters speaking English, French, German, and other languages, and will negotiate for Captains with the Russian Standard Petroleum Company.

Nor have the Company neglected the interests of the growers. It is true that, owing to the extraordinary and unexpected influx of grain into the port, 8,000 wagons were last year under grain at one time, 3,000 of which were compelled to remain thus undischarged for more than three months awaiting shipment. But immense warehouses having been built, with a total storage capacity of 65,000 tons, growers can now store their produce and obtain advances on it.

4.—Future Development.

In the preceding articles I have attempted to gauge the evils affecting the Russian grain trade, and have indicated the source whence a movement has arisen for their abolition. I have now to deal with the future, and will therefore at once proceed to state the grounds upon which I base my strong optimism in regard to the future of the trade.

For Russia to obtain the practical monopoly of the European grain trade, the movement so successfully initiated by the Vladikavkaz Railway Company at Novo Rossiesk must extend to the other Russian ports. This much is apparent. How then is it to be accomplished? Powerful interests are involved in the maintenance of the system at present in operation at these ports, and admittedly nothing will break them down but the pressure of dire necessity. I shall therefore strive to show that there is a great probability of this necessary pressure being exerted in the by no means distant future.

Everything bends before competition. If the grain trade of the Caucasus, which even now is a factor to be taken into account by merchants in making their calculations, increases in the future at the rapid rate at which, as I have shown, it has increased in the past; if, too, means can be found to divert through the new port a large portion of the grain produced in other parts of the Empire, which produce now finds

other outlets, few will deny that the pressure of competition thus brought about will force the older ports, however unwillingly, to adopt the new system.

That both these indispensable conditions will be fulfilled, I see, in the present circumstances, no reason for doubting. They are both largely dependent for their fulfilment on the attitude taken by the Russian Government. The satisfactory result already obtained at Novo Rossiesk is to be attributed almost entirely to the private enterprise of a Railway Company. In Russia, however, all such enterprises depend for their success, and even for their continuance, on the favour of the executive Government. The frown of a Minister is sufficient to depress the ardour of any body of enterprising commercial men. From the first, therefore, the Vladikavkaz Railway Company have been anxious to secure for their venture the favourable regard of the Imperial Government. At the outset they did not, it is said, meet with the success they hoped for in this direction, all kinds of obstacles being, it is asserted, placed in the way of their undertaking. At length, however, they obtained the appointment of a Government Commission to visit and report on the harbour. To this Commission they submitted the following programme of reform :—

(1) To improve the quality of the grain prior to shipment by submitting it to a process of cleaning, shifting, weighing, etc., in the elevators of the Company.

(2) To establish a system of making advances on all grain delivered by the growers at the stations of the Company, and to build for this purpose a series of small elevators in the interior.

(3) To diminish the expenses attending the loading and carriage of grain by transporting all large parcels in bulk, and also by establishing at Novo Rossiesk a *fixed* railway tariff and list of charges.

(4) To afford to steamers loading at the port of Novo Rossiesk every convenience for despatch by means of special mechanical arrangements.

(5) To establish a Grain Commission, whose duty it shall be to inspect the parcels of grain prior to shipment, and to grant certificates as to their condition.

(6) To construct a large American elevator capable of holding 50,000 tons of grain, and containing all the latest appliances for cleaning and storing the grain.

(7) To construct two new docks near the premises of the Company, the present Government harbour works not being in a favourable situation for the expansion of the trade.

This programme was generally approved by the Commission, and many of the reforms alluded to in it have, as we have seen, already been carried out. The Government sanction has been given to the erection of the elevators, and the proposition as to the docks is under consideration. We have seen the satisfactory result which has followed on the inauguration of these reforms; but, great as the attractions of Novo Rossiesk as a port have proved to be already, they will largely increase when the whole programme has been completed.

Much more important, however, than the visit of this Commission, was that of the Minister, whose recent tour through the territories of

Russia in Central Asia has attracted so much attention. On his return journey, M. Vishnegradsky made a special visit to Novo Rossiesk for the purpose of forming on the spot an estimate of its capabilities.

"It is no secret that this energetic Minister was very favourably impressed by what he saw at the new port, and that he returned to St. Petersburg resolved to recommend the Government to give free scope to the energies of the Vladikavkaz Railway Company, and to do everything in his power to further the object which the Directors have at heart. Government assistance in the prosecution of these reforms is thus assured. I will now therefore proceed to indicate the extent to which the Caucasus is capable of development and the other means whereby the trade of Novo Rossiesk is likely to be further increased.

The Caucasus is, it should be borne in mind, a country as large as France. That portion of it, however, through which the Vladikavkaz Railway runs, and in which the grain exported at Novo Rossiesk is produced, consists of parts of the fertile provinces of Kuban, Stavropol, and Terek, and comprises an area of about 5,000 square miles. Even in this region there is room for great development. Much of it, notwithstanding the richness of the soil, has never known a plough, and in the cultivated portions the yield per acre is small owing to the bad system of agriculture. Only 15 per cent. of the Kuban district and 10 per cent. of Stavropol are estimated to be under cultivation, and the yield per acre in the cultivated districts is eight times less than in England. Several causes have combined to produce this unsatisfactory state of affairs, all of which bid fair, however, to be removed in course of time. They may be stated thus: (1) The sparseness of the population; (2) the absence of good roads; (3) the want of knowledge on the part of the peasants of a proper system of agriculture. As regards the first cause mentioned, the population of the 5,000 square miles above referred to does not exceed three million souls. This population is wholly insufficient for gathering in the harvest. Every year the Railway Companies bring from Vologda, Onega, and other Northern Governments, at one-third the ordinary fare, a numerous army of labourers to assist in the work. Notwithstanding this aid from less-favoured Governments, the crops of many cultivators in the Caucasus are annually spoiled through sheer inability to gather them before the corn is damaged by the scorching heat. It is to be hoped, therefore, that the Central Government will see the advisableness of offering inducements to these harvesters from the North to settle in the Caucasus. Is there not here, too, an opportunity for the Government to test, in the capacity of farmers, those starving Jews to whose sad condition so much attention has recently been directed? It is not too much to say that the region tapped by the Vladikavkaz line would, if properly farmed, support three-times its present population. As regards (2), the absence of good roads, this deficiency is mainly due to the sparseness of the population; and as regards (3), it is satisfactory to learn that the repugnance of the peasants to foreign agricultural machines is gradually being overcome. Though very rudimentary methods of cultivation still obtain in the larger portion of the district, machinery is now fast coming into use. Last year the Railway Company carried over 4,000 tons of machinery and agricultural implements; and I have been informed by the Mayor of Stovopol that in

his district, where, before the opening of the Novo Rossiesk branch line machinery was almost unknown there are now in use over 2,000 machines. Few farmers, of course, are able to buy these machines. They hire them from the Railway officials at the various stations. These officials find it no unprofitable speculation to invest their savings in agricultural machines, for they obtain as payment for their use one-fifth to one-eighth of the grain thus threshed. The favourite ploughs in use are made by Ransome-Sims, Heena, and an Anglo-Bulgarian firm. A kind of harrow is used in the hilly districts for turning over the upper surface of the soil.

It must be evident to any-one who will consult the map on page 700 that the cultivated portion of the Caucasus bears but a small proportion to the cultivable portion. There are thus great possibilities before Novo Rossiesk if the country be properly opened up. To this fact M. Vishnigradsky is thoroughly alive. He has, indeed, already approved of the construction of two new lines of railway, offshoots of the Vladikavkaz main line, and has under consideration certain schemes of irrigation. The courses of the new branch lines are shown on the map above referred to. The one is to run from Vladikavkaz to Petrovsk, a port on the Caspian; the other from Techoretz (where the Novo Rossiesk line joins the main line) to Czaritzin, a town on the Volga.

The Petrovsk line, which will be really an extension of the main line, will be the first to be constructed. Its purpose is not only to further open up the fertile province of Terek, but to afford communication between Novo Rossiesk and the grain-producing districts on the other side of the Caspian. Of late the Russian authorities have been evincing much interest in this portion of the Empire. I have not extended my travels thither; but I am credibly informed by a gentleman who has just returned from a tour of 11,000 miles in Turkestan, Southern Siberia, and the Khirgise steppes that Central Asia is not by any means the barren place ignorantly supposed by many Europeans; on the contrary, it is in many districts astonishingly fertile. Turkestan and Trans-Caspia are watered by the Oxus rivers—the Syr-darya, Murghab, Zarafshan, and Tchirchik; but these waters not being sufficient for those thirsty districts several canals will probably be constructed. One will probably run from the Oxus to Bairam Ali, "the stepping-stone to Herat;" another from Syr-darya to Jizak, across the Galodnaya steppe, which latter is nearly a hundred miles long; while a third will proceed from the Oxus to Bokhara, *viâ* Karshi, the Zarafshan river, exhausted by the requirements of Samarcand, Kermineh, and Katte-Kurgan, not being sufficient for Bokharan cultivation. Moreover, on the Murghab, some 40 miles south of Bairam Ali, the dam known as the Sultan-Band is in course of construction. When finished, this work will fertilise over 150 square miles of land. On it, and the canal system generally, Sir Colin Moncrieff is now reporting to the Imperial Government.

In the oasis of Merv the finest wheat can be grown for three roubles a tchetwert (=5·77 bushels), and could, it is asserted, be conveyed to Novo Rossiesk by the Trans-Caspian and Vladikavkaz railways at a fair profit. Farther on, too, in the Semerotchinsk district, the cost of production is still less—1½ roubles only per tchetwert. This district will be

connected by a branch line with the Trans-Capsian Railway, which now extends into Asia from the Caspian about 900 miles, a distance which the trains perform in sixty hours.

With regard to the projected Czaritzin branch of the Vladikavkaz main line, any one will perceive from the map that it would, if constructed, open up an immense tract of hitherto uncultivated land. Its main purpose would be, however, to divert to Novo Rossiesk a large portion of the traffic which now goes northwards through St. Petersburg. The produce of the Volga provinces is at present towed up-stream at great expense, and then floated to the capital through the canals of the Mariansky system. If the proposed connection of Czaritzin with Techoretz is effected, the grain barges would float down-stream, discharge at Czaritzin into railway trucks, and in this way be conveyed to Novo Rossiesk with a minimum expenditure of time and money. Needless to say, this project will encounter vehement opposition in the Russian capital, whose grain trade it would go far to ruin. But it offers such manifest advantages over the present expensive system, and there is such urgent necessity for competing with America, and other grain-exporting countries, that the carrying of it into effect cannot be delayed many years.

Limited as is the present development of the Caucasus, Novo Rossiesk already has a monthly export of 60,000 tons. What will its export amount to if, and when, all the reforms and projects to which I have referred are fully carried out? It will have become a veritable Chicago. If, too, other Russian ports see the wisdom of adopting its enlightened method of carrying on the grain trade, is it at all unlikely that Russian grain will practically monopolise the European market?

In such a contingency politicians may see a danger. They will argue that it would never do for England to be dependent for her grain-supply on a country with which, at any time, she may be at war. I am not concerned, however, to deal here with the political aspect of the question, but will merely state my assured conviction that the closer are drawn the commercial bonds between the two countries, the less likelihood is there of a disruption of their friendly relations.

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